

THE WEALTH AND WELFARE OF THE BENGAL DELTA

[Comprising the Districts of Mymensingh, Dacca, Bogra, Pabna,
Faridpur, Bakarganj, Tippera and Noakhali]

*Thesis approved for the Degree of Doctor of Science (Economics)
in the University of London.*

By

S. G. PANANDIKAR, M.A. (Bom.), Ph.D. (Econ., London.),

INDIAN EDUCATIONAL SERVICE, .

PROFESSOR OF ECONOMICS, ELPHINSTONE COLLEGE, BOMBAY,

SOMETIME (1921-23) PROFESSOR OF ECONOMICS, UNIVERSITY OF DACCA.



CALCUTTA UNIVERSITY PRESS

1926

PRINTED BY BHUPENDRALAL BANERJEE
AT THE CALCUTTA UNIVERSITY PRESS, SENATE HOUSE, CALCUTTA

Reg. No. 79B—19-4-26—1,000.

PREFACE

When the writer joined the Dacca University in Eastern Bengal in 1921, the fact, of which he had already been aware, that there was no good book dealing with the economic organisation of Bengal, came more forcibly to his notice. The only book on the subject is the late Mr. Jack's "Economic Life of a Bengal District." It is an admirable exposition of certain aspects of the economic life of the Faridpur District, but it deals only with this district, and even then is incomplete in that certain other important aspects of that life find no place in it. Its main purpose was the vindication of the British Rule in Bengal from the economic point of view, and it hardly deals with the shortcomings of the economic organisation of the province and their causes. For these deficiencies of the book, however, Mr. Jack was not responsible. He had an unrivalled personal knowledge of a large part of Bengal, combined with high intellectual capacity and keen insight, and if he had had the necessary time, there can be no doubt that he would have produced a far better book. The book in question was written by him in London in 1915 entirely within five short days, largely from memory as most of the material which he had collected had been left behind in India, just before he went to the war front and was killed. Even a genius could not have done justice to the subject under such circumstances. But it is rather surprising that no one has yet come forward to carry further the work which Mr. Jack had begun so well, especially as in the other major provinces of India substantial work has already been done in rural economics. In Bombay, Mr. Keatinge, the late Director of Agriculture, has written "Rural Economy in the Bombay Deccan" and

“Agricultural Progress in Western India”; in Madras Dr. Gilbert Slater, Professor of Economics in the University, has brought out “Some South Indian Villages”; in the United Provinces, Mr. Martin Leake, the Director of Agriculture, has written “The Bases of Agricultural Practice and Economics in the United Provinces”; and in the Punjab Mr. Calvert, the Registrar of Co-operative Societies, has produced “The Wealth and Welfare of the Punjab.” The present writer therefore commenced a close and first-hand study of the economic conditions of rural Bengal as soon as he joined the Dacca University and continued it without intermission for more than two years. As the whole province of Bengal would have been too large an area for this study, and as the natural and economic conditions materially differed in East, West and North Bengal, he selected for his study the deltaic portion of the province, comprising the districts of Mymensingh, Dacca, Bogra, Pabna, Faridpur, Bakarganj, Tippera and Noakhali, in which these conditions were more or less uniform; and the phrase “the Bengal delta” used throughout the following pages refers only to this tract and not to any other part of Bengal. The writer has travelled throughout this delta, and these pages are very largely the result of his own personal observations and investigations, but he has also drawn on the experience of many men, both official and non-official, who have given it out in the course of discussions and conferences and in Government reports and other writings, and to whom the writer is much indebted.

The ignorance of rural economics, on the part of the intelligentsia of Bengal as of the other parts of India, even of those whose homes are in villages, and their apathy towards agriculture are great, yet the working out of the new system of Government, whose paramount object must be the improvement of the economic conditions of the great mass of population deriving its livelihood from agriculture,

is in their hands. There is therefore a considerable risk of mistakes being made, unless a sound knowledge of rural economics can be spread among them. History shows how easy it is to advocate and adopt wrong remedies, which promise good results to the ignorant, but which produce the effect of aggravating economic ills instead of curing them. These pages will not have been written in vain, if they arouse the interest of at least a few members of this class, in the economic problems of rural Bengal, and if they stimulate them to consider the remedies that they advocate.

The title of the book was first suggested by Prof. Pigou's famous "Wealth and Welfare." But before it could be completed, the writer found that by a curious coincidence, the same title had independently suggested itself to Mr. Calvert also. However, as the title indicates most effectively the main purpose of these pages, it has been retained.

The writer is deeply indebted to the late Sir Asutosh Mookerjee, the Vice-Chancellor and the Syndicate of the Calcutta University for taking up the publication of the work at the beginning of 1924, but owing to the pressure of work on the University Press, it could not be published till the middle of 1926.

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INTRODUCTION.

In his previous work,¹ the writer has explained that the main characteristic of India's economic life during the last three decades has been that the country has been passing through an economic revolution, similar in many respects to the one, which took place in England during the early part of the last century and later in the other countries of Western Europe, that during this period India has been in a state of transition from the old archaic economic order to the new and reorganised order, and that, though the transformation is still in its earlier stages, the change that has already taken place, is striking. For this purpose, a detailed analysis and examination of India's economic life were attempted, but they had to be restricted to those factors, regarding which generalisations more or less affecting the whole country could be made, *viz.*, foreign commerce, organised industry, finance and banking and public finance. It was mentioned that agriculture and handicrafts could not be treated effectively in a work of that nature, because they varied so much by localities that all-India generalisations on them were not likely to be very useful, and that to deal effectively with them, India should be divided into a number of tracts, and that they should be examined separately in each tract. As mentioned in the preface, this work has been done more or less satisfactorily in the more important tracts of India with the notable exception of Bengal, by separate writers; and their work shows that, although the rural organisation of each tract has its distinctive features and special problems, some features and problems are common to them all, that

¹ Some Aspects of the Economic Consequences of the War for India, Taraporevala & Co., Bombay, 1921.

they are undergoing a transformation, which although rather slow, is clearly noticeable, and which is gradually making them approximate more and more to those existing in Western Europe, that many of the problems facing them are similar to those which existed in the countries of Western Europe when they were passing through their economic revolution, and that the solution of these problems lies in applying, with the necessary modifications, the remedies which these countries have more or less successfully applied to their own problems. It is important to examine whether rural Bengal is undergoing a similar transformation and tending to approximate more and more to Western Europe in its organisation, and this task is attempted in the following pages with regard to, not the whole of Bengal, but only the deltaic portion of it, which has been formed, which is watered, and the economy of which is fundamentally influenced by three rivers, which are among the biggest in the world, and by their numerous tributaries. For this purpose it will be necessary first of all to examine the physical characteristics of the delta, the action of the rivers, the conditions of the soil and rainfall and the natural means of communication, because they vitally affect the production of wealth; then stock will have to be taken of the agricultural, commercial and industrial wealth of the delta, and the methods, by which it is produced, will have to be examined; the land revenue systems also will have to be examined, because their influence upon the production of wealth, especially agricultural wealth, is great; it will then be necessary to examine how far the wealth conduces to the welfare of the population, and for this purpose it will be necessary to examine the standard of living of the population and the pressure which it exerts upon the means of subsistence, and finally an examination will have to be made of the defects in the organisation by means of which the wealth is produced and consumed. It is only after such an analysis and examination that it will be possible to say

whether the economic revolution mentioned above is taking place in the delta, and if it is, to examine its features and intensity.

The task undertaken in the following pages has a special significance, because it will either strengthen or weaken the case made out by the writer in his previous work, that the general economic reasoning, as developed in the West, is capable of application to Indian conditions, with the precaution to examine how far its premises square in each particular case with the facts, Economics being a body of reasoning, which holds good and professes to hold good only when certain premises are granted. It was explained that Mr. Ranade, the pioneer economist in India, and other writers after him asserted that, as the economic conditions in India differed widely from those in the West, and as Political Economy, as developed in the West, was based upon certain hypothetical assumptions, which were not true in the case of an agricultural country like India, its principles did not apply to her. They did not admit that economics was a universal science, and maintained that it was merely the science of Western industrialism, *i.e.*, of business as it was done in the manufacturing countries of the West, and that India therefore must develop "National Economics" or "Indian Political Economy" of her own. Some of the later writers have realised that there cannot be one Political Economy for India and another for England, and that the general economic reasoning as developed in the West is applicable to Indian conditions, but some writers still hold that India must develop a Political Economy of her own, because her economic tendencies are still radically different from those in the West.¹ In his previous work, the present writer showed that the conditions of India's economic life, so far as foreign commerce, organised industry, finance and banking and public finance were concerned, tended to approach more and more those of the

¹ This is the basis of all the works of Prof. Radhakamal Mukerji.

economic life in the West. Other writers have shown that the same tendency is clearly noticeable even as regards the rural organisations of the more important tracts in India excepting Bengal. If a study of the rural organisation of the Bengal delta leads to the same conclusion, it will be clear that India's economic life, in all its aspects, and in all the more important tracts, is gradually approximating more and more to that in the Western countries. Such a result will be of the highest importance, because it will show that with the progress of this transformation, the principles propounded by Western economists will be more and more applicable to India. If, on the other hand, it is found that no such tendency is noticeable in the Bengal delta, it will mean that at least in one important part of India, economic conditions continue to be radically different from those obtaining in the Western countries, and this will strengthen the position of those economists who assert that India must develop a Political Economy of her own.

However, even if economic reasoning as developed by Western economists, is applicable to India, it is necessary to emphasise that those parts of their reasoning, which have been based upon the considerations of the conditions of agricultural organisations, need to be developed further; for they have given a greater attention to the problems of large-scale and organised industry than to those of agriculture, as the chances of larger profits from the former seem to have more attracted their attention, and as, until recently, there was an inadequate appreciation, on their part, of what science could do towards increasing the agricultural wealth of a country. If the examination of the rural organisation of the delta shows that the principles propounded by Western economists are applicable to it, the examination may also be expected to lead to some fresh lines of the development of the principles.

The question whether the economic reasoning developed in the West is applicable to the Bengal delta has a great practical

importance. It is generally admitted that the standard of production and the standard of living in it, as in the other parts of India, are much lower than those in the Western countries, in spite of the fact that nature is much more favourable to the former than to the latter. Remedies are urgently required for these deficiencies, but the great question is what lines they are to take. Are they to follow the lines of the remedies ¹ which have been successfully applied by the Western countries to their economic ills, and which have enabled them to rise to high standards of production and of living, or are they to take independent lines? If it is found that economic conditions in the delta tend to approach those in the West, and that the economic reasoning developed in the West is applicable to it, the remedies developed by the Western countries can, with the necessary modifications, be applied with success to it. It will then be necessary to examine the nature of these remedies and the methods of applying them. It is axiomatic, but in India it needs to be emphasised, that economic ills require for their cure economic remedies. The undue importance given to political considerations in Ireland, in the opinion of Irish writers, seriously weakened the character of the Irish farmers as producers of wealth. It was only when economic remedies were applied that the economic condition of that island began to improve. The choice of remedies must obviously depend upon the ills to be cured. To bring them out, there must be a close examination of the existing economic organisation of the delta. If such an examination brings to the surface the causes of the low standards of production and of living in the delta, and if some remedies capable of practical application can be discovered and set

¹ The phrase "Western countries" refers throughout this work to Great Britain, the U.S.A., France, Germany, Belgium, Denmark and Holland, which are high on the plane of civilization, and have high standards of production and living, and it has no reference either to decadent countries of Europe, such as Spain, Portugal and Greece, or to semi-civilized countries such as those of the Balkan Peninsula and Russia, which have low standards of production and living.

forth for removing them, the role of the economist will be fulfilled and his claims made good, and it will be for the politician and the administrator to undertake the necessary legislative and administrative measures for putting them into operation.¹

The goal of all economic activities of a community is the highest welfare of the largest numbers, and the criterion of the welfare is the standard of living, interpreting the phrase in a wide sense as including all the necessities, conveniences and comforts which go to make up a civilized life. It is therefore upon the standard of life that the main attention will have to be focussed in the following pages. It is true that human progress does not consist entirely of material advance, but history shows that without it sustained intellectual and moral advance is not possible. The cultured, politically progressive, and morally emancipated peoples have been those, who have pursued advanced methods of production and enjoyed a high standard of life.² No people have been able to develop a pure form of social and domestic life or a high type of morality except in relation to some kind of productive work.³ Further, as there does not appear to be much chance of achieving common religious, cultural or political ideals in the delta, a general realisation of common economic interests will be the only powerful unifying influence.⁴ Everyone can strive for improving the standards of production and living of the whole community, leaving each section of it to its own ideals other than economic.

¹ Cf. Calvert: *The Wealth and Welfare of the Panjab*, p. 3.

² Cf. Gillette: *Constructive Rural Sociology*, p. 25.

³ Cf. Carvour: *Principles of Rural Economics*, p. 24.

⁴ Cf. Calvert: *The Wealth and Welfare of the Panjab*, p. 17.

CHAPTER I.

THE PHYSICAL CHARACTERISTICS OF THE DELTA.

The following pages deal with the economic life of the Bengal delta formed by the main channel of the Ganges called the Padma, the Brahmaputra called the Jamuna in these parts and the Meghna, and containing the districts of Mymensingh, Dacca, Bogra, Pabna, Faridpur, Bakarganj,¹ Tippera and Noakhali. The Brahmaputra and the Meghna flowing out of the two main valleys of the province of Assam meet near Chandpur and form a harp-shaped block of land of nearly 9,000 square miles consisting of the Mymensingh and Dacca districts ; Bogra and Pabna form the triangular block of land between the main stream of the Ganges and the Brahmaputra which unite their waters near Goalundo ; Faridpur and Bakarganj are on the western bank of the united rivers and Tippera and Noakhali are on their eastern bank. The natural conditions of this delta are peculiar and differ in many respects from those of other parts of India. It consists entirely of old mud, new mud, or marsh ; it is watered by rivers, which are the biggest in India and among the biggest in the world, and which are connected together by a marvellous network of smaller rivers and streams ; most of it is flooded with water for from three to six months in the year, nevertheless its agricultural yield is so large that it maintains a very large population in a state of comfort, which, although substantially lower than that of the agricultural populations of the Western countries, is the highest in India ; it is the most densely populated rural tract in the whole world, and in many parts of it the density of population is so great as to stand comparison with that of many industrial tracts of the same size.

¹ This district is also known as Barisal, being named after its chief town.

The creation of the Bengal delta has been very peculiar. At some remote period in geological history the delta did not exist at all, and the ocean washed the foot of the Himalayas and the Garo and the Khasia hills, which still form the boundary between Assam and Bengal. Numerous streams descending precipitously from these mountains and hills carried away large quantities of rock and at the same time ground them into fine sand. As a result of the annual deposit of this substance, land slowly emerged in the north and gradually extended southwards. This was the older alluvion of the Bengal delta, and some of it is still to be found on the surface in the large tract of stiff red soil extending from Dacca town to Jamalpur in the Mymensingh district and known as the Madhupur Jungle, in the area known as the Barind in Bogra and the adjoining districts of Rajshahi, Dinajpur and Rangpur, and in the little Mainamati range lying five miles west of Comilla in Tippera. With these exceptions, the soil of the delta consists of new alluvion deposited by the alluvial action of the existing rivers. These, unlike the older hill streams, show a scarcely perceptible drop through long distances, and have been depositing large quantities of silt consisting of a finer material than the rock which made up the older alluvion. All the land, however, has not been raised to the same level, because the parts distant from the rivers and streams have obtained only small deposits of silt. Consequently, hollows were formed, and marshes called *bils* have resulted. However, in the case of some of the larger marshes, it is believed that they have been caused by earthquakes after the rivers had performed their work of filling up the area.

The delta thus exhibits various stages of formation. In the north is the area of the old alluvion entirely above the level of the annual inundations and dependant for its productivity on the rainfall, irrigation being practically unknown. This area is, however, comparatively small. It is a tableland

with an average elevation of about 40 feet above the surrounding plains. It is interspersed by long winding depressions of ordinary dark clay called *bairds* in which winter rice is grown. The steep slope between the mounds and the *bairds* is generally covered with scrub jungle. The higher land grows crops of mustard and jute for one or two years, but much of it is still covered with forest, the soil is not fertile, and the cultivators depend mainly on the *baird* lands for their subsistence. Then there are belts of land as in the north of Faridpur, the west of Dacca and the south-west of Pabna, which, although formed by the new alluvion, have been formed earlier than the other parts of the delta, and which received such continual deposits of silt in the past that the process of their formation was more or less completed some centuries ago. These belts consist of a large series of plains intersected by a number of rivers and streams, which have silted up or are silting and which are now full of water, only at the height of the rainy season. These plains generally contain in the centre marshy hollows, which are annually flooded with water for six months, but which yield abundant crops during the rest of the year. This part of the delta has been occupied for several centuries. The villages are usually situated either on the banks of the old rivers or in the hollows. In the latter case, the homesteads have been built on earthen mounds raised in order to keep them above the level of the flood.

Then there are those parts of the delta, whose formation is not yet complete, and which are full of broad and deep rivers. The three big rivers, the Ganges, the Brahmaputra and the Meghna, with their numerous distributaries, are heavily charged with constructive silt and sand, and the fall is sufficiently slow and slight to give them a depositing instead of an excavating tendency. When the current is somewhat rapid, the silt passes on towards the sea, but in slack water it is deposited on the banks of the rivers, where grass

and other vegetable growth catch and retain it. When the banks are raised above the level of the flood, the silt remains in the bed of the river, which therefore slowly rises above the level of the surrounding country, and when at last one of the banks gives way, the river changes its course to the low land at the back. Besides these marked changes of course, alluvion and diluvion occur continually, that is, the great rivers continually eat away one bank and make deposits of silt on the other, while alluvial islands called *chars*, some of which are quite large, rise from their beds, and sometimes disappear as quickly as they come into existence. The surface of the country near the big rivers thus changes continually, land being formed, and then washed away and reformed. This action of the big rivers becomes more important as their united waters pass between Bakarganj and Noakhali to join the sea. At the mouth of the estuary many islands exist, the largest of which are Sahabazpur, Hatia and Sandwip, which are being continually eaten up on one side and added to on the other. The *chars* of the oldest formation possess almost the same characteristics as the mainland; they have villages consisting of groups of houses surrounded by fruit and other trees with intervening rice lands. The newer *chars* have no trees and usually consist of uniform cultivated plains interspersed with many canals called *khals*, and with patches of land, whose soil has not yet become fit for cultivation. Still younger formations are the *chars* hardly above water, but overgrown with grass, on which cattle may be found grazing. The youngest of all are the banks of mud and sand, which appear above water only when the tide is low and possess no value except to the fishermen. Traces of continual transformation may be found among the *chars*, upright or overhanging banks showing the spots where the river is eating away the land, and gradually sloping banks, showing those where new land is being formed.

Finally there are the large marshes called *bils* as in the south-west of Faridpur, north-east of Bakarganj, and the north and west of Tippera, which vary greatly in size in accordance with the amount of filling up which they have undergone. Numerous watercourses connect the marshes with the rivers that may be flowing in the regions, and they would have admirably performed the work of bringing large quantities of silt from the rivers and depositing them into the bils during the flood season and carrying away the water from the bils when the floods subside, thus gradually filling the bils up, had it not been for the fact that they are inclined to shoal at their junction with the rivers, and this takes away a large part of their utility in filling up the bils with silt. The rivers bring down a large quantity of silt during the flood season, but it is only when the flood is at its height that the silt is carried over the shoal and into the connecting channel. On the other hand, when the floods subside, the shoal prevents the water of the marsh from being drained quickly into the rivers, which at this time become sufficiently low to take it away to the sea. These regions are covered with water for eight months in the year, and the only land visible above water during this period consists of the raised mounds on which homesteads are built and the narrow banks of the streams. But during the other four months of the year, large parts of land become quite dry and support a large population by enabling the cultivators to obtain a large yield of rice, but the centre of the bils always remains marshy and unfit for cultivation.

The marvellous river system is thus the key-note to a proper understanding of the economic conditions of the Bengal delta, and it is important to note the working of this system. The name Padma is given to the lowest course of the Ganges below Goalundo, but it is also sometimes used to include the reach above Goalundo upto the mouth of the Bhagirathi. The Padma consisting as it does of the combined channels of

the Brahmaputra and the Ganges, which unite their waters at Goalundo, is a mighty river carrying the drainage of almost the whole of Northern India, the southern slopes of a great part of the Himalayas, and of portions of Tibet. The width of the river between the banks varies from 2 to $3\frac{1}{2}$ miles, and its magnitude during the flood season may be realised by remembering that it is almost the only outlet for the mighty floods carried by the Sone, Gandak, Kosi, Teesta, etc. The Meghna falls into the Padma near Chandpur, and from this place the combined waters of the three mighty rivers, with a width increasing gradually from 4 to 10 miles, roll down towards the sea, however, again dividing themselves into three large channels before finally meeting the sea. It is interesting to find that the Brahmaputra has changed its channels more than once. It is probable that in pre-historic times, it flowed direct south more or less along its present main channel forming the western boundary of the Mymensingh and Dacca districts. From the beginning of history to the end of the eighteenth century it flowed through the Mymensingh district and joined the Meghna at Bhairab Bazar at the south-eastern corner of the district instead of joining the Ganges. In 1870, the great Tibetan river Tsangpo joined the Brahmaputra and this, together with the famous flooding of the Teesta, made the Brahmaputra seek a shorter way to the sea by joining the Ganges at Goalundo, the old channel being reduced to insignificance. Even in the dry season the Brahmaputra has a breadth of from three to four miles, and it is perpetually throwing up islands in its bed and washing them away again, and cutting away and adding to its banks.

The Meghna is formed by the union of numerous streams that rise in the Garo, Kachar and Sylhet hills and pass through the lowlands and jheels lying between the Mymensingh and Sylhet districts. It is a mighty rolling flood of great depth and velocity, sometimes divided into half a dozen channels by sand-banks of its own formation, sometimes spreading into a

wide expanse of water. Like the Brahmaputra and the Padma, it is navigable throughout the year by the largest native boats and also by river steamers, but navigation is much more difficult in the Meghna than in the other two rivers, and sometimes even dangerous. When the tide is low, the bed is obstructed by shifting sand-banks and by snags, and when the tide is high or the river is flooded, and particularly when the monsoon blows, the surface frequently becomes too rough for boats to move in safety. In this case also alluvion and diluvion take place continually, and large islands are often formed and change the main current from one bank to another. The water of the Meghna is very dirty and hardly potable, being full of half-decayed organic matter washed down from the Sylhet jheels, and consequently there is probably no river in the world which so much abounds in fishes as this river, especially in its upper courses.

These three mighty rivers in the course of their passage to the sea are fed by a number of rivers, too numerous to mention, which, though smaller, are large in themselves as will be realized from the fact that their breadth varies from $\frac{1}{4}$ mile to 2 miles. The importance of the river system to the whole delta, however, depends not so much upon the number of large rivers as upon the multitude of smaller distributaries and streams, which act as irrigation channels and spread the flood water far and wide. The country between the large rivers is covered with an amazing network of smaller rivers and streams intersecting each other in an indescribable confusion. Most of the larger streams are distributaries of the great rivers, and most of the smaller join the distributaries together. Every depression is surrounded by a large number of channels, which fill it or drain it at different seasons of the year. Even homesteads are usually surrounded by moats, which are connected with the smaller streams, and which thus take part in this work of distribution. In many parts of the delta, it is impossible to walk a mile without coming to a

stream, which can be crossed only with the help of a bridge, and in some parts such streams are found even after every quarter of a mile. These streams locally known as khals carry the flood water almost to every part of the delta, with the exception of the high tract of the old alluvion, from July to October, and as the water subsides, the soil is enriched with a large deposit of silt. With the exception mentioned above, there is not much land in the delta, which at some time or other during the flood season does not receive some deposit of fertilizing silt.

Thus it becomes clear that the cultivator of the Bengal delta, excluding the high land of the old alluvion, is much less dependent upon the local rainfall for his food than his fellows in the other parts of India. There is therefore hardly any danger of a famine or even a serious scarcity over a wide area. It is true that the winter rice and the fruit trees require rain at the right time, but delay does not ruin them, and rain is practically certain. In some years the rain comes at a time which is not well suited to the winter rice, but it does not cause any serious failure of crops. Rain is no doubt much more important for the spring and autumn crops, but they do not form such a large proportion of the total production of food as to cause a famine or even a scarcity. Floods are much more important than rain for the crops, and are a blessing, but sometimes also a curse, to the cultivator. In order to prove most useful to him, flood water should begin to cover the soil in June, should rise slowly until September, and then should also subside slowly. Quick rises, when the autumn or the winter rice is young, cause great damage, but such rises are not very common, and if they take place they are usually followed by a quick fall. The floods are seldom late, but sometimes they fall too early, and then the winter rice crop of the higher lands suffers from the want of sufficient moisture.

The larger part of the water and the silt obtained by the delta is brought down by the Brahmaputra. Local

rain helps the floods and moistens the higher land, but the Brahmaputra flood is at first fed by the melting of the snow in the Himalayas and later by the rain in the catchment region, when the monsoon breaks against the Himalayas. The monsoon sends large quantities of water, but comparatively little silt, down the Meghna from Sylhet. The Brahmaputra flood commences to subside in August, when the Ganges begins to rise, and keeps the level of all the rivers high for a month more. The Ganges, however, does not bring a large quantity of silt so far east, and in recent times the height of the flood has been diminishing. These silt-carrying floods penetrate to most of the area under cultivation, and cover it with a rich deposit. They never fail, and they not only produce the winter rice crop, but also prepare the soil for all other crops. They are thus a determining factor in the agriculture of the delta. Even when they are too high or too sudden, they only damage the crops on the banks of the larger rivers or in the larger depressions, and when too low, the only effect is that they cannot penetrate to the higher lands. An excess or deficiency of floods, therefore, cannot cause even a widespread scarcity, much less a famine.

The configuration of the surface of the land in the delta is also on the whole very favourable to the productiveness of agriculture. Most of the land of the delta is a level plain, and so water can be retained on it by means of small ridges and made to supply the moisture, so essential in a tropical country, during the intervals of dry weather, no erosion can take place, and the permanent cultivation of all such land is practicable. In those tracts of India, whose surface is largely uneven, the bottoms of the slopes are very fertile as they receive the drainage and detritus from the higher levels, but cultivation is less productive in the slopes themselves, and becomes still less productive as the tops are approached. The higher the land, the more quickly does water drain off from it, and the greater becomes the necessity for regular rainfall. On high

ground even a short break injures the crops and a long one destroys them. Moreover, sloping land, when ploughed up, becomes subject to erosion, and the soil is soon washed away. Such land can grow only the hardier and less productive crops, and it must be kept fallow during long intervals in order that it may regain at least some fertility. What is most important is the gradient of the slope. If it is gentle, the above disadvantages are less pronounced, but if it is steep, cultivation becomes impossible. Frequently, the shortcomings of sloping land are reduced by an elaborate system of terracing, the slopes being cut into a number of steps, each of which is held up by a retaining wall. But this system is practicable only when the slopes are not too steep, and when there is an adequate depth of soil for excavation. In a hilly tract, the proportion of the whole area which can be terraced in this way is very small. Happily, the delta is mostly free from such drawbacks and problems.

The only serious danger to cultivation arises in the south of the delta from inundations in the Bay of Bengal, which generally take place before the commencement of the monsoon or in October and November, as a consequence of cyclones. The greater storm waves occur at very infrequent intervals, only three being recorded in history, in 1822, 1854, and 1876, but they engulf every living thing in the region over which they pass, destroying all human undertakings, crops, cattle and fresh water, drowning thousands of human beings and making a temporary wilderness of the entire area. Storm waves of much smaller magnitude occur more frequently, but they damage only a part of the coast and cannot penetrate far inland. When they occur before the breaking of the monsoon, a part of the havoc wrought by them can be repaired soon, as the floods gradually wash the salt out of the soil, but the loss of cattle hampers the cultivating operations, and the lack of fresh water causes considerable sufferings both to human beings and cattle, as at least a couple of years must

elapse before fresh water, once salted, can become fresh again.

Although rainfall is not such a determining factor in the agriculture of the Bengal delta as in that of other parts of India, it does play an important part. Rain is required at the end of March to make the ploughing easy, because, without it, the soil is generally too caked to be broken easily. Then rain is necessary in June for broadcast sowing or for preparing seed-beds. In October the floods subside, so rain is again necessary to invigorate the winter rice crop, but strong wind will destroy the crop. In November the paddy flowers, and heavy rain will destroy the ear. Rain or cloudy weather in December breeds rice pests, which destroy the crop, while it checks complete germination. Rain, however, is required in January for the rabi crops. The rainfall is generally abundant throughout the delta, the average varying from 70 to 100 inches in different parts, and seldom fails, when it is required. Sometimes, however, it comes during November and December, when it is not required, and partially damages the crops. On the whole, the distribution of rain over the year combined with the annual floods, permits the growth of crops in all the seasons of the year, and prevents the delta from becoming dependent upon the rainfall of any one season.

It is thus seen that in matters of fertility of soil, plenitude and distribution of water and drainage, nature is very bountiful to the delta. Indeed it is far more so to the delta than to most countries, and in this respect the agriculturists of the former are far more fortunate than those of the latter. In England, for instance, the soil is not naturally fertile. Six centuries ago, a large part of the country was full of swamps, heaths and jungles, it has taken all these centuries to bring the land to its present state of fertility by means of careful manuring and cultivation, and even now no farmer can think of sowing seed without manuring his land. In

France and Germany also, a large part of the land returns only what is put into it in the shape of manure and careful tillage, and the peasants, generally speaking, may be said to work on the principle of putting back into the land as manure a large part of what they obtain from it in the shape of crops. In Denmark, the soil was largely loose sand swept by sea winds, and its farmers have had to employ all the available forces of science, organisation and human effort to bring it to its present state of fertility. The soil in Belgium is said to be the worst in Europe and in spite of centuries of careful manuring and cultivation, it does not yield any crop without previous manuring.¹ In the countries of Southern Europe also, the land is much less fertile and favourable to cultivation than in the Bengal delta.²

As the delta is rich both in wide rivers deep enough for steamers and in shallow streams suitable for small boats, it is endowed by nature with an admirable system of water communications. Moreover, Providence has bestowed upon the delta a great favour by making the prevailing winds blow from the south and the east throughout the rainy season, when boat communications are mainly used. All the rivers flow eastwards or southwards, so that the boats float down with the streams and sail up with the wind. If the boatmen had to depend only on their own exertions to make their way against the flooded rivers during the rains, trade would have become almost impossible, because although many of the better kinds of country boats have very fine lines, their means of propulsion are still very clumsy and primitive. Rice and other agricultural produce are carried to the local market in the small boat which every family possesses, and thence they are taken in country boats to a neighbouring steamer station or to more distant ports. The import trade in manufactured

¹ Cf. Rowntree—*Land and Labour Lessons from Belgium*, pp. 148-9, and Calvert : *Wealth and Welfare of the Punjab*, pp. 63-4.

² Cf. The Foreign Office handbooks on Spain, Greece, Servia, Bulgaria, etc.

goods, oil, salt, etc., is mostly in the hands of the steamer companies, from whose stations the commodities are conveyed by the retail merchants in their own boats to the local markets in the interior. A number of steamer services both for passenger and goods traffic ply throughout the year in the larger waterways. In addition, in recent years, the railway system has been considerably developed in order to connect the interior of the districts with the big rivers. The Dacca-Mymensingh—section of the Eastern Bengal Railway passes through Dacca and Mymensingh districts and connects their interior with the Padma and the Brahmaputra; and the Mymensingh-Bhairab branch of the Assam Bengal Railway connects the interior of Mymensingh with the Meghna. Two sections of the latter railway pass through Tippera and Noakhali districts and connect them with the upper reach of the Meghna as well as the Meghna estuary. Three sections of the Eastern Bengal Railway connect Bogra, Pabna and the north of Faridpur with the Brahmaputra and Calcutta.

The delta thus possesses efficient means of communication during the rainy season. But conditions are very different during the dry season, when the smaller waterways dry up and roads have to take their place. The delta is very badly served in the matter of good roads, because the maintenance of land communications during the dry season, in an area which is flooded with water during the rainy season, is difficult and expensive. Most of the so-called roads are merely fair-weather tracks, which are termed roads only by courtesy, and most of these even are seldom tracks even in the fairest weather. The number and mileage of metalled roads properly embanked and bridged and provided with sufficient culverts, are suprisingly small. As the existing culverts are usually insufficient, there are frequent breaches in the roads. Moreover, the absence of bridges over some water channels renders some portions of the roads practically useless to cart traffic

and agricultural produce can be conveyed to the markets and manufactured goods can be brought therefrom only by costly and wasteful human labour or pack-ponies. Thus, the improvement of the means of communication during the dry season, is one of the problems which the people of the delta have to face and solve.

CHAPTER II.

THE AGRICULTURAL WEALTH OF THE DELTA.

After the examination of the physical characteristics of the delta, the next thing to do is to proceed to take stock of its wealth, as the economic conditions and the standard of life of any people depend primarily upon the resources at their command. It is hardly necessary to mention that the delta is predominantly agricultural, because it has already been explained that from the point of view of agriculture, the delta enjoys advantages for which it would be difficult to find a parallel in any part of the world, and that the climate, the soil and the river system are all alike most favourable to a prosperous agricultural industry. Since the Permanent Settlement that was made at the end of the 18th century and more especially since the Revenue Survey that was made in the sixties of the last century, the area under cultivation has gradually increased along with the growth of the population, so that at the present time almost the whole of the land, which is available for cultivation, is under cultivation, and the possibilities of extending this area except in the extreme south of the delta in the future are very limited. The following figures make this clear :

Gross area in square miles.					Land area and percentage.			
	Mymen- singh.	Bakar- ganj.	Farid- pur.	Dacca.	Mymen- singh.	Bakar- ganj.	Farid- pur.	Dacca.
Total area of district ...	6,227	4,891	2,601	2,832	5,981	3,490	2,347	2,648
Fallow ...	380	202	86	48	6	6	4	2
Bamboo and thatching grass	310	213	101	123	5	6	4	4
Total culturable	690	415	187	171	11	12	8	6
Houses ...	286	221	166	170	5	6	7	6
Roads ...	146	26	39	40	2	1	1	2
Bils, sand and jungle, etc. ...	711	401	86	228	12	11	4	9
Rivers ...	246	1,401	254	184	...	...	...	...
Total unculturable ...	1,379	2,049	545	622	19	18	12	17
Balance cultivated	4,158	2,427	1,869	2,039	70	70	80	77
Dofasli (Double-cropped) ...	1,479	357	587	708	25	10	25	27
Gross cultivation	5,637	2,784	2,456	2,747	95	80	105	104

	Total area in sq. miles.	Percentage of total area.		
		Cultivated.	Culturable.	Unculturable.
Tippera ...	2,523	80	3	17
Noakhali Mainland ...	1,068	77	3	20
Noakhali Islands ...	525	58	16	26

Land culturable in these two districts but not cultivated is distributed as follows:—

	Total culturable area in sq. miles.	Percentage of culturable area.				
		Old fallow.	New fallow.	Bamboos.	Thatching grass.	Miscellaneous.
Tippera ...	80	28·6	6	32·9	15·9	16·6
Noakhali Mainland	35	29	6	14	42	9
Noakhali Island ...	87	30	4	...	5	61

Detailed figures for Pabna and Bogra are not yet available, because the survey and settlement operations in these districts are not yet concluded but in 1920 the figures for these two districts were as follows:—

District.	Total area in sq. miles.	Percentage of total area.		Percentage of cultivable area of—	
		Cultivable.	Net Cultivated.	Net Cultivated.	Double-cropped.
Bogra ...	1,359	86	53	62	33
Pabna ...	1,839	87	71	82	14

It is thus seen that the area culturable, but not cultivated, is everywhere small. Moreover, a large part of the area regarded as culturable in the above figures is not really available for the cultivation of crops. Thus the land on which bamboo clumps and thatching grass are grown, although statistically included in the land not cultivated is practically cultivated, as they are grown purposely on land which is fit for the cultivation of crops, in order to provide the materials indispensable for the erection of the homesteads. They yield as much profit per acre, if sold, as the crops which can be grown on that land. It is true that with the increased use

of corrugated iron for roofing purposes for a few years before the war, the value of thatching grass had somewhat decreased. But with the enormous increase in the price of corrugated iron since the war, thatching grass has come into great demand again, and those cultivators, who ploughed up their patches of thatching grass and converted them into arable land, are repenting of their action, because thatching grass can be grown only on high and well-drained land with a light soil and takes a long time to grow. Moreover, even if corrugated iron becomes cheap again after some time, only the more well-to-do cultivators can afford, as before the war, to roof their homesteads with it, and a large majority of cultivators will have to continue to depend upon thatching grass. Similarly reeds, which are valuable for matting, are deliberately left to grow on land which can yield an abundant harvest of boro rice. So also there is not much unculturable area which is really unemployed. As it is necessary for the population to be housed and to have means of communication, the area shown as roads and as homesteads, including tanks and ditches which generally are inseparable parts of the homestead, can never become available for cultivation. Thus, the possibilities of extending the area of the cultivation of crops are strictly limited, and any substantial increase in the agricultural wealth in future can be expected only from a more intensive cultivation of the area on which crops at present are grown.

Although the area under cultivation has gradually increased during the last 140 years, the routine of agriculture and the methods employed in it have not altered much during the course of these years, because the cultivator of the Bengal delta, like his fellow in other parts of India, has been conservative. David Paterson, who made a survey of certain parganas of Tippera in 1787-9, has left a description of the methods of cultivators of his day. But for the fact that jute now replaces cotton, the methods of cultivation are mostly

what they were in Paterson's time. As regards manure, the cultivator usually depends upon silt deposit for the manuring of the land on which paddy and the ordinary rabi crops are grown. To the fields, in which jute, tobacco or sugar-cane is grown, he generally applies cow-dung, which is the only form of manure in general use. It is, however, applied carelessly, and the extent of the application depends not on the requirements of the fields and the crops but on the amount readily available to the cultivator, because a large proportion of cow-dung is burnt as fuel and much more is wasted. It is seldom that the full amount really required by him is available. The custom of erecting cow-houses in the open fields and moving them from time to time in order to give every field a turn exists in a few localities. Elsewhere, as a rule, only the fields nearest the homestead are occasionally treated with small heaps of manure from the farmyard. The cultivator knows well that cow-dung acts as an efficient manure even on alluvial soil which is enriched by deposits of silt, and the failure on his part to apply it is the result of carelessness and not of ignorance. In those parts, where straw is abundant, the paddy is cut a foot from the ground, and the stocks which are burnt on the ground, form a fairly good manure. Occasionally, jute fields receive some green manure, in the form of dhaincha, which is sometimes grown on their boundaries, without much effort on the part of the cultivator, but the application of such manures is haphazard and not understood. Even in the area of the old alluvion, where silt deposits are not available for enriching the soil, which has only moderate fertility, and where careful manuring is necessary, little manuring is actually done beyond the occasional application of a few basketfuls of cow-dung. In this area, therefore, the crops grown without manure are, except in the *baidis*, generally very deficient in quality and quantity.

In the matter of selection of seed also, there has been little improvement. The cultivator seldom purchases seed,

but usually keeps it from the previous season's crop. It is true that he realises the need of keeping seed from the best part of his crop and that occasionally seed is exchanged, particularly when the cultivator desires to grow a new variety or kind of crop. But it cannot be said that he sows the best obtainable seed. This is mainly because he has not hitherto paid sufficient attention to this matter. However, recently the Department of Agriculture has begun to supply improved seeds, whose use has been shown to improve substantially the quality and yield of the crops concerned, the cultivator has begun to realise their value, and the demand for them is increasing.

The types of agricultural implements employed by the cultivator have been handed down by one generation to another without any alterations. The plough consists of a curved piece of wood, one end of which is kept in his hands by the cultivator, and the other sheathed in iron loosens the soil. The plough is generally dragged by a pair of bullocks fastened by a yoke attached to the plough by a horizontal pole. The wooden piece is frequently hewn by the cultivator himself and only the iron sheath is added by a blacksmith. This type of plough is primitive but is more suited to the requirements of alluvial land than more modern patterns, firstly because the iron plough would be too heavy for the kind of plough cattle that have been in use, and secondly because it would overturn the soil to too great a depth and so destroy the benefit from the annual thin deposit of silt, which is generally the only manure received by the soil, by bringing to the surface the barren sand that lies just below the surface and by carrying the silt below it. Experiments, which were made a few years ago, with iron ploughs of a modern pattern, proved unsuccessful. In the area of the old alluvion, which does not receive any deposit of silt, and where deeper ploughing and the use of manure is necessary, the use of the modern plough would have been very beneficial, but it has been

found to be too heavy for the weak and puny cattle that are employed.

When the ploughing is over, the clods of earth that remain in hard clayey soils are broken up, before harrowing is done, by a hammer called *mugur*, the head of which consists of a strong and heavy piece of wood, and the handle, of strong but light bamboo. The harrow called *mai* or *changa* consists of a ladder-like thing, with two bamboos, about six feet long, joined together by cross-rods of bamboos. The cultivator stands on this harrow in order to give it the requisite weight, and then it is dragged along by a pair of bullocks. This kind of harrowing is done before as well as after sowing, and helps to cover the seeds. When the seeds begin to grow, the ground is loosened and the weeds are destroyed by an implement called *anchra*, a comb-like implement, which consists of a horizontal bar with a number of wooden teeth jutting downwards, and which is dragged along by cattle. When the plants become a foot high, an ordinary handhoe takes the place of the *anchra*. The only other important implement used is the sickle or *kachi* consisting of a crescent-shaped iron blade with a wooden handle.

Generally bullocks are employed throughout the delta for ploughing, but sometimes buffaloes and cows take their place. There does not seem to prevail any great prejudice against using cows for this purpose. The bullocks are largely locally bred, but to some extent they are also imported, mostly from Bihar. The imported animals are built much more strongly than the local ones, but they rapidly lose condition in the damp climate of the delta, and as they are more costly to purchase and keep, they are less popular than the local bullocks. The local breed produces very small and weak animals, but apparently they are healthy, as they have to lead a hard life. The inferiority of the local breed is the result of the damp climate, the shortage of fodder, and the practice of employing immature bulls for purposes of breeding.

The cattle in those parts of the delta, which are under water during the flood season, are, during this season, restricted in their movements to the artificially raised areas occupied by the homesteads, and have to subsist on a poor quality of paddy straw. When the water subsides, they can move about much more freely, but their conditions of living are not much more satisfactory on account of the lack of grazing ground. On the high lands, the cattle can move about freely, throughout the year, but the same difficulty exists there also. The extent of grazing ground is surprisingly small throughout the delta. Almost every piece of land, that is fit for cultivation and not required for human occupation, is made to grow crops or fruit-trees. No cultivator will set apart for grazing land which can grow rice or jute, and public grazing grounds do not exist. Pathways and cattle tracks are gradually absorbed into the fields on their sides by the cultivators of the fields, until hardly sufficient room is left for two persons to pass each other on foot. The banks of tanks and the slopes of embanked public roads, and in some parts new chars, which are not yet fit for cultivation but grow grass, and marsh land unfit for growing any crop but available for grazing when the water subsides, afford the only grazing that is available. The cattle get enough to eat just after the winter rice is cut, but during the latter part of the dry season and until the autumn rice is cut, they are half-starved. Occasionally, *khesari* and *mashkalai* are grown as fodder crops after the winter rice, so that the cattle may feed on them off the ground. But this source of fodder is not given the attention that it deserves, on account of the general indifference of the cultivator to the condition of his cattle. Thus the fodder which the cattle obtain during the year as a whole, as a working ration, is below par, and had it not been for the fact that the cattle have not more than a month's hard work in the ploughing season, during the whole year, the situation would have become impossible.

The reason for the custom of breeding from immature bulls appears to be that no one likes to keep a fully developed and troublesome bull, when a bullock would be more useful and easier to manage. The villagers do not seem to have developed a sufficient spirit of co-operation to keep a bull for their common use, and there is no father of his village, as in some parts of India, to keep one for the benefit of the villagers.

The cultivators have not paid any appreciable attention to a scientific rotation of crops also, as they do not appear to have realised its value in retaining the productive capacity of the land. The cold weather crops such as mustard, pulses, tobacco, etc., may be varied from one year to another, but the changes are not made with any attention to the benefits that may be derived from the rotation. But the introduction and extension of jute cultivation and the tendency to sow either rice or jute as may promise a larger profit have produced an important change, and have led the cultivators unconsciously to adopt rotation, as a large amount of land grows rice in one year and jute in another.

The substitution of jute for cotton has been the only important change in the routine of agriculture during the last 140 years, although the cultivator is now beginning to realise the importance of manure, improved seed, better cattle and more efficient implements. Cotton of a good quality used to be produced until the early part of the last century especially in Dacca and Tippera districts, and used to be in great demand for the cloth industry for which the delta was famous. With the decline of that industry, the cultivation of cotton, the yield of which was in the neighbourhood of only six maunds per acre, was gradually abandoned. By the time of the Revenue Survey of 1863, cotton cultivation had disappeared, and jute had gradually taken its place. The hill tribes of Assam still find cotton to be a paying crop and grow it, so that its disappearance from the delta was due to the fact that

the cultivators found jute more paying than cotton. From David Paterson's account referred to above, it is found that in 1787 the profit from the cotton crop per acre to the cultivators was nearly the same as he would have obtained from sowing autumn and winter rice together. But jute, although its value fluctuates heavily from year to year, on the whole, has given them a larger profit. Thus this change in the routine of agriculture has been distinctly beneficial to the delta, and as the area under jute in recent years has been far larger than what was under cotton formerly, the cultivators have made considerable progress from the self-sufficing to the commercial stage of agriculture.

This important improvement in the agricultural position of the delta, however, is partially set off by the alarming spread in recent years of the water-hyacinth weed locally called *Kachuri* or *Bilati Pana*. The crops of the delta are comparatively free from insects or other blights, the damage caused by them being always local and of little importance. But water-hyacinth is now an exception to the rule, because considerable damage is being done to paddy crops by its rapid extension. Water-hyacinth is a native of Brazil and has now acclimatized itself throughout the Tropics. As the pest is killed by severe frosts, the more temperate zones are free from it. On account of its beautiful flower, it found its way into gardens in different countries, and thence it spread all over the country-side. It began to be regarded as a pest in Florida in 1890, in Queensland in 1895, in Cochin China in 1908, in Burma in 1913, and in Bengal in 1914. The unusually high floods which prevailed throughout the delta in 1917, carried away much of the weeds to the sea, and in 1918 and 1919 the progress of the pest was checked. But since 1920 it has spread very rapidly. The normal propagation of the plant in the delta is by stolons or runners. The bladder-like expansions of the leaf-stalk and the sail-like leaves are important assets to the plant in propagation. The

former enable it to float, and the latter enable it to travel with the wind into new areas. This ability to travel is of very great importance in the spread of the pest and accounts for its spreading upstream. The weed grows so rapidly that a place cleared of it will become fully overgrown in one or two weeks and that a single root can, in a few months, cover an area of more than 600 square yards. Its spread is most pronounced during the rainy season, when the country is flooded with water, partly because the atmospheric conditions are then most favourable to its growth, and partly because the flood carries its shoots from place to place.

The destruction of this pest increases considerably the labour of cultivation, and notwithstanding all care on his part, a cultivator may lose a substantial part of his paddy crop, if the flood carries the weed to his field from a neighbour's land or from a neighbouring common water-way. Its luxuriant growth may help to fill up the deeper marshes and fertilise the boro rice lands, but its encroachments on the area cultivated and culturable are already serious. In some districts the cultivators have such a dread for the weed that they have named it "*German pana*" in the belief that it was introduced by the Germans at the beginning of the Great War for the destruction of the paddy crop. The damage wrought by the weed does not end here. Communications by boat during the rainy season are also being blocked, as the waterways become choked with the weed. It also adversely affects public health and the fish supply. The Agricultural Department has shown by means of demonstrations that the ash obtained by drying and burning the weed forms a good manure, rich in potash, and that it can be sold at prices which will almost cover the cost of removing and destroying the weed. But hitherto no action in this direction, worth mentioning has been taken by the cultivators either individually or in concert, and if this state of things continues much longer, there is a real danger not only that the agricultural

position of the delta will deteriorate substantially in the near future, but also that it will become most difficult to bring the crops in boats from the fields to the threshing floor, and to go to and return from the markets in them.

The agricultural wealth of the delta consists primarily of rice and jute and the other crops are of much less importance. The relative importance of the different crops is shown by the following tables.

AGRICULTURAL WEALTH

Crop.	Faridpur.		Bakarganj.		Tippura.		Noakhali.		Dacca.		Mymensingh.		Pabna.	
	Area.	Per cent.	Area.	Per cent.	Area.	Per cent.	Area.	Per cent.	Area.	Per cent.	Area.	Per cent.	Area.	Per cent.
Rice	813	72.1	1,313	84.7	905	51.1	601	92.4	732	54.8	{ 1,455 773 195 }	{ 54.7 29.7 7.2 }	{ 566 140 7 }	56
Wheat	242	22.1	136	8.8	309	17.4	190	22.2	221	1.0	12	5	32	...
Barley	13	1.1	5	.3	21	1.2	...	...	11	...	...	...	...	...
Pulses	71	6.3	33	2.1	60	3.3	34	5.2	114	7.9	75	3	14.4	10
Other food grains	42	3.7	9	.6	5	.2	3	.4	16	...	...	...	...	...
Oilseeds	5	...	19	1.2	1	...	3	...	3	...	...	...	...	...
Linseed	4	.3	...	...	...	...	...	...	7	...	...	...	...	...
Gingelly	43	3.8	4	.3	54	3	13	2	104	5.9	94	3.4	30	...
Mustard	7	.6	4	.3	7	...	5	.7	1	...	...	...	...	...
Others	10	.9	19	1.2	8	.4	4	...	10	5.8	299	11.1	158	11
Jute	26	2.3	1	.1	39	2.2	.6	...	89	...	...	...	...	...
Condiments and spices	11	.1	...	...	...	...	.7	...	...	...	...	...	...	...
Sugarcane	159	14.1	26	1.7	248	14	28	4	256	14.6	598	23.6	155	11
Tobacco	31	2.7	21	1.3	30	1.7	23	3.5	16	.9	16	...	6	...
Fodder crops	7	.6	12	.8	2	.1	1	.1	5	.3	4	...	11	...
Betal (pan)	4	.3	.6	...	3	.2	...	...	7	.4	11	...	7	...
Orchards and garden produce	...	...	...	...	6	.3	3	.4	.6	...	1	...	4	...
Miscellaneous	6	.5	1	.1	.5	...	7	.1	3	.1	1	...	...	...
TOTAL	69	5.8	173	11.1	71	4.3	68	6.1	122	7.0	52	...	...	...
	...	...	2	.1	6	.4	3	.4	5	.3	15	...	9	...
	1,503	133.3	1,782	114.7	1,773	102	910	139.6	1,758	101.2	3,608	144.3	1,271	...

Percentage of gross cultivated area under—

	Rice.	Other cereals and pulses.	Jute.	Orchards and garden produce.	Sugar.	Fodder, oil-seeds and other crops.
Bogra ...	80·8	3·9	9·9	·5	·8	4·1

The above figures are intended to give only a general idea of the relative importance of the area occupied by the different crops. The area varies appreciably from year to year according to the variations in their prices and in their financial prospects, and also according to the character of the season. Moreover, a substantial part of the land noted as *dofasli* or double-cropped, because it grows two crops of rice or rice and jute, really grows three crops, because oil seeds or pulses are grown in it during the cold weather. A rough idea of the relative money values of the different crops may be obtained from the following tables:—

GROSS PRODUCE: MYMENSINGH.

Crop	Average produce per acre in maunds.	Price per maund.		Total value of each crop in lakhs of Rs.
		Rs.	As.	
Aman ...	20	2	8	728
Aus ...	18	2	4	315
Boro ...	30	2		116
Jute ...	16	9		816
Sugarcane ...	50	7	8	13
Mustard and Oilseeds...	6	5		90
Pulses ...	6	5		37
Onions ...	9	8		12
Chillies ...	8	10		3
Spices ...	90	12	8	6
Tobacco ...	10	10		8
Betel ...	...	300 per acre		4
Vegetables ...	...	75 per acre		50
Wheat and Barley ...	7	3	8	3
Hemp and Fodder ...	...	15 per acre		5
Miscellaneous ...	...	20		10
TOTAL ...	...	..		2,216

Dacca.

Crop.	Average produce per acre in maunds.	Price per maund.		Total value of each crop in lakhs of Rs.
		Rs.	ANS.	
Jute	15	8		307
Aman	15	2	8	275
Garden produce ...	...	150 per acre		182
Aus	13	2	6	67
Mustard	10	7		62
Miscellaneous cereals ...	10	3	8	37
Khesari	10	3		34
Spices	8	10		13
Betel ... ..	...	300 per acre		9
Sugarcane ... ..	...	150 per acre		7
Barley	12½	2		7
Masuri	10	4	8	7
Sesamum	9	8		7
Tobacco	10	8		7
Boro	20	2	4	7
Gram	12	4		5
Potatoes	100	2		3
Wheat	9	5		3
Miscellaneous seeds ...	8	6		2
Fodder ... ..	...	...		1
Mung	4	5		5
Linseed	2	7		25
TOTAL ... ..	...	...		1,039

FARIDPUR.		BAKARGANJ.	
	Total value of each crop in lakhs of Rs.		Net value of each crop after deducting rent and cost of foreign labour.
Aman ...	301	Aman ...	Lakhs of Rs. 532
Aus and boro ...	57	Aus and boro ...	46
Jute ...	205	Jute ...	21
Other crops ...	46	Sugarcane ...	8
Garden produce ...	26	Other crops ...	37
Bamboos and grasses	22	Orchards and garden	102
		Bamboos and grasses	18
TOTAL ...	657	TOTAL ...	765

NOAKHALI.		TIPPERAH.	
	Lakhs of Rs.		Lakhs of Rs.
Aman ...	440	Aman ...	452
Aus and boro ...		Aus and boro ...	117
Jute ...	43	Jute ...	372
Other crops ...	43	Other crops ...	43
Garden produce ...	170	Garden produ ...	106
Bamboos and grasses	15	Bamboos and grasses	20
TOTAL ...	710	TOTAL ...	1,110

These tables also are meant to give only a rough idea of the relative financial importance of the different crops, and can lay no claim to any accuracy. The information upon which these tables are based was collected by Survey and Settlement Officers in different years between 1901 and 1917, when the general level of prices was on the increase. The figures of the money value of the different crops have only a relative significance now, as enabling a comparison between the different crops from the point of view of their money value. But they have now ceased to give any sure indication, even if they did when they were compiled, of the real wealth of the agricultural population of the delta, on account of the more rapid rise of the general prices and the heavy fluctuations in the prices of these crops since the War.

Thus from the point of view of area occupied, the aman or winter paddy crop is the most important throughout the delta, the aus or autumn paddy crop comes second, although far behind the first, jute comes third except in Bakarganj and Noakhali, where its cultivation is on a much smaller scale, orchards and gardens stand fourth, and the area occupied by the other crops, although large in the aggregate, is much smaller when considered separately. Considering money value, the aman paddy crop again is the most important, except in Mymensingh and Dacca, where jute occupies the premier position according to the above tables. In the delta, as a whole, aman paddy is the most valuable resource of the agricultural population, and jute comes next; aus paddy stands third and the orchards and gardens stand fourth, although in Noakhali and Bakarganj they are much more valuable than jute. The other crops, although they are a substantial addition, in the total, to the above resources, are much less valuable if taken into account singly. Aman and aus paddy and the products of orchards and gardens, as food crops, and jute as a commercial crop, are thus the principal resources

of the delta, upon which the subsistence of the agricultural population of the delta primarily depends.

Many varieties of rice are grown in the delta, but they can be grouped in three main classes, boro, aus and aman, reaped in the spring, autumn and winter respectively. Aman is either transplanted or sown broadcast with aus, or sown broadcast by itself without aus, the three methods being known as *roa*, *lam* and *payara* respectively. Aus is generally not transplanted because seedlings must be transplanted in a few inches of water after they have reached a certain height, and the existence of the water cannot be depended upon in April and May. Whether aus is to be sown at all, and whether aman is to be transplanted or sown broadcast, depends largely on the level of the land. Generally transplantation is practised, wherever the water on the land is not likely to be more than about 9 inches in depth at the time of transplantation. In those fields, in which the depth of the water is likely to be higher than this, aman is sown broadcast, before they are flooded with water. In fields too low for transplanting aman, if the depth of the water is not likely to be higher than about $2\frac{1}{2}$ feet in July, aus is sown along with aman broadcast in March. The aus is reaped at the end of July and the aman in December. Where the height of the water is likely to be greater than this, only aman is sown and not aus, because the latter, being short-stemmed, will be completely covered and destroyed by water. The cultivator transplants his aman wherever possible, because the transplanted varieties yield a heavier crop of a better quality than those sown broadcast.

Four ploughings, if possible after rain in April, as the stiff clay cakes without water, each followed by a harrowing, are required for all the varieties of aman. Considerable interchange of ploughs, cattle and labour is resorted to by the poorer cultivators, while those possessing large holdings hire labour. Then in the case of broadcast aman, the seeds are sown broadcast throughout the fields in April or May, they

germinate in two or three days, and the seedlings appear after five or six days. The crop remains in the fields throughout the flood season and is reaped towards the end of December. The broadcast varieties are long-stemmed and grow to a surprising length, fifteen feet being common. The plants continue to grow along with the increase in the height of the flood, keeping their heads above water. So long as they can keep an inch or two above water they continue to flourish. They can grow at the rate of one foot per day, but if the flood rises more quickly, they are completely covered with water, their growth stops, and if the water does not partially subside within ten days, they die.

In the case of transplanted aman, the seedlings must be prepared in a nursery and then transplanted to the fields. For the seed nursery a small area is selected, whose soil is always moist, but which is not so low that it cannot be drained after heavy rain. When it has been worked into a liquid mud the seeds are sown very thick, germinate and remain in the nursery for about three months before being transplanted. In August, the plants, which reach a height of about 18 inches, are transferred from the nursery to the fields and are planted out thinly in clumps of 4 or 5 plants. The transplanted varieties are harvested at the same time as the broadcast ones, namely in December, both kinds of crops receiving but little weeding. The cultivators as a rule dislike reaping, and many of them hire labour for it, paying from $\frac{1}{8}$ to $\frac{1}{5}$ of the crop as wages, although reaping is a much less toilsome task than ploughing or transplantation, because the presence of the crop enables them to hire labour and to remain idle themselves. Threshing is done by cattle which are muzzled and tied side by side, and which move round a bamboo post in the courtyard or on a threshing floor prepared for the purpose. The cultivators generally prefer to sell the aman rice after husking it, and sell it unhusked only when they are pressed by the landlord to pay

the rent or by the creditor to return a loan. A substantial part of the crop is in this way sold early and at a sacrifice, the cultivators losing the best of the market.

As mentioned above, aus paddy is sometimes grown along with aman, but sometimes it is succeeded by transplanted aman, or by a rabi crop. Sometimes it is grown merely to give the land a rest from jute. It is grown on lands which are suitable for jute cultivation also, and the extent of its cultivation has suffered owing to the greater profit obtainable from jute. The height of the plant does not exceed $3\frac{1}{2}$ feet, and it dies if the flood water rises even to half its height. Being mature at the time of the flood, it cannot rise with the rise of the flood. This crop therefore is very liable to destruction from a sudden and unexpected flood. The seeds are sown broadcast on soil that has been ploughed four times and refined by the harrow. Generally, manure is not used, and weeding is done only once, when the plants reach the height of from 6 to 10 inches. The crop is sown between February and April and is reaped between July and September. In some localities, *e. g.*, in Bakarganj, the aus is transplanted at the end of May or in June and reaped in August. In reaping, only the ear is cut, the straw being allowed to rot in the fields and ploughed into the soil afterwards as manure. The aus rice is seldom sold by the cultivators, and is not much eaten by the middle classes called the Bhadralog. But it is most useful for the home consumption of the cultivators, as it is obtained during the lean part of the year and as they like its sweet taste.

Boro paddy is not a very important crop, except in the eastern part of Mymensingh, where it is the main crop. It is grown in *bils* and low-lying *chars*, which are too deep in water during the flood season for growing aman and too dry and caked in the spring for growing aus or jute. Except in Mymensingh, no ploughing is required, as the soil is sufficiently soft. Artificial irrigation, however, is in some

cases required, when the water dries up. This is supplied by raising the water from the centre of the *bil* or from a neighbouring tank by means of a wooden scoop working on a pivot, the water being retained in the irrigated land by embankments of mud at short intervals. Boro paddy is generally transplanted, except in Bakarganj, where it is sown broadcast also. The seedlings are transplanted from the nursery in November or December, and the harvest is reaped in April or May, weeding being unnecessary. Boro paddy produces a coarse and inferior grain, and is always kept by the cultivators for their own consumption. But it has two advantages; firstly its cultivation involves little trouble, and secondly the yield is very heavy, varying from 20 to 40 maunds per acre.

Jute is grown extensively in Mymensingh, Faridpur, Dacca, Tippera and Pabna districts. Mymensingh is far ahead of the other districts in the production of jute, and grows nearly $\frac{1}{4}$ of the entire outturn of the world. With the exception of sugar-cane, jute requires more care and trouble than any other crop. It has many varieties, some of which can be grown only in comparatively low-lying areas, while others can be grown in higher land of less humidity, and produce a superior fibre. Jute grows best in loamy soil, which readily absorbs, as well as parts with, water. No variety can stand waterlogging or excess of moisture. Careful and frequent ploughing is necessary for this crop. In low-lying lands, where the crop is reaped in July, ploughing commences in December and in other lands in February. If there is no cold weather crop in the fields, ploughing should begin early in the cold season. In hard clayey soil as many as ten ploughings may be required, in sandy soil, four may suffice. Five or six harrowings are generally required and the clods must be broken with the *mugur*. Some cow-dung is added during this preparation of the soil, but the quantity is generally insufficient. Seeds are sown

broadcast between February and April, and are covered by applying the harrow. When the plants are about 6 inches high, weeding, loosening the earth and thinning out the plants become necessary. The yield depends to a large extent upon the density with which the crop is allowed to grow. If it is too thin, the plants give out branches, which spoil the fibre. If it is too thick, the plants cannot grow properly, and though tall, they become thin and yield little fibre. The necessary density is secured by removing the weaker plants and leaving the stronger ones at a distance of about six inches from one another.

The plants require about five months for their full growth, but if they are covered more than half by water, they die. Therefore, the seeds are sown at a time, which will allow the full growth of the plant before the normal advent of the floods. Frequently, however, the crop has to be cut before the right time, on account of an early flood, and this involves a considerable loss to the cultivators. Cutting generally commences when the crop flowers, and if the crop is a large one, fruits appear before the cutting operations are finished. If the crop is allowed to stand until pods ripen, the fibre becomes coarse in texture and dirty reddish in colour. However, the cutting of the crop has to be delayed sometimes on account of a lack of water for steeping it.

Jute fibre is contained in the bark of the plant and is held together by a kind of gum which must first be softened by fermentation and then removed by washing. The fermentation takes place when the plants are cut and kept under water, the process being called steeping or retting. Bundles of the plants are placed one over another in a stagnant pool and are covered with leaves and weeds, which help to keep all the bundles completely under water, and which at the same time protect them from the strong rays of the sun, which tend to discolour the fibre. The plants require

from 10 to 20 days to ret, the period depending upon the stage of their development and the temperature and other conditions of the water. It is important that the retting should be to the right extent, because under-retting does not soften the gum sufficiently and so makes the fibres stick together, and because over-retting makes the fibres weak and dull. The kind of water used for retting is also an important matter, because muddy water discolours the fibre. Stagnant water is preferred to running water, because it is generally less muddy and also because the decomposition of the plants proceeds more rapidly in it. When retting is over, the fibre is separated from the stick and washed in water by beating it against the surface of the water. The water is then wrung out of the fibre, which is allowed to dry on bamboo rails in the courtyards of the homesteads. The washing also must be done in clear water, otherwise the fibre would be discoloured. The sticks of the plants are used as fuel or for fencing purposes. The yield and quality of the fibre varies considerably according to the variety grown, the locality in which it is grown, and the care taken in cultivation, steeping and washing, the yield varying from 7 to 30 maunds.

After aman and aus rice and jute, the produce of gardens and orchards, as mentioned before, is the most important agricultural resource of the delta as a whole. In the gardens, many kinds of vegetables are grown such as pumpkin, gourd, brinjal, radish, arum, cucumber and chili. Most of them, however, are grown only for local and usually for home consumption. The produce of the orchards consists of the betel-nut, cocoanut, date palm, bel, plantain, pine-apple, mango, jack-fruit and other fruits. A considerable quantity of the produce is retained for home consumption, but a large quantity mainly of the betel-nut, cocoanut, the juice of the date palm and the molasses prepared from it, is also sold. Moreover, the value of this resource does not consist in its mere amount. The yield is constant and varies little from

year to year. The produce is sold by the cultivator mostly in the dull season, when no other crop is being grown, when he is short of money, and when without this resource he would have to go to the money-lender for a loan to tide over the period, until the jute or winter rice crop becomes available. This resource is of still greater value in those exceptional years, which, on account of some natural calamity, produce a lean crop of jute or winter rice.

The rabi or spring crops are not important in the delta, in contrast to their importance in other parts of India. The cultivators in Bakarganj and Noakhali islands depend entirely on their winter rice, and do not wish to allow experiments with spring crops to interfere with its success. In other parts of the delta pulses such as khesari, musuri, mung, and gram and oil-seeds such as mustard, til (gingelly), and linseed are grown as spring crops to some extent, but not extensively, because they do not pay well and therefore are not much tempting to the cultivators, who can obtain large rice or jute crops with less labour. They are not much inclined to plough their land twice or thrice, when it is caked very hard, for the sake of the few rupees that the spring crops can bring in. Among these crops the most extensive are khesari and musuri. The seed is generally thrown down among the stubble without any ploughing, just after the winter rice is cut, and when the soil is still wet. The crops are not generally used for human consumption, but when the plants grow to their full size and the pods are formed, cattle are allowed to eat the crop off the ground; this happens in February and March, when the grass on the sides of paths and roads is dried up and when fodder is scarce, grazing lands as such being practically non-existent in the delta. With regard to wheat and barley, as spring crops, the winter rice crop being harvested late, they have not sufficient time to be sown and to ripen before March or April, when the rain would spoil them. In char lands where the winter rice is harvested a month earlier than in other

lands, there is greater scope for spring crops, but the cultivators' fields are far away from their homes, cattle are let loose on the chars to subsist on the stubble and grass as soon as the rice crop is taken in, and if any cultivators were to sow rabi crops, they would mostly serve as food for the cattle of their neighbours, as the cattle are not looked after during the day except at times, and as the rabi crops are not thought valuable enough to be worth guarding.

Finally, it is necessary to examine the average cost of cultivation. It has been mentioned before that the cultivator rarely purchases seed or manure. He retains the seed from his previous year's crop, and whatever manure he uses comes from his farm-yard. In special cases he may purchase seed or manure, but on the average these items are so small that they may be safely neglected in an examination of the average cost of cultivation in the delta. The agricultural implements, being simple, are cheap. The plough costs about Rs. $3\frac{1}{2}$, the other implements together about the same amount, and an expenditure of Rs. 7 on implements will generally suffice for a holding of five acres for seven years. With regard to live-stock, the cultivators say that one pair of fairly good bullocks is enough for a holding of five acres, even when two or three crops are grown, and this view is supported by the figures of live-stock collected by the Settlement Officers. It should be remembered that in most other parts of India, one pair cannot suffice for the needs of a holding of this size, because nature is more kind in this respect, as in many others, to the Bengal delta than to the other parts. In the latter, not only is the soil hard, but also the rainfall of the season is condensed in a short period, so that when rain comes, the preparation of the ground for each of the main kinds of crops and the sowing must be pushed through in a large area within a short period of from 2 to 4 weeks. In the delta, however, the soil is less hard and the rainfall is much better distributed on the whole, so that ploughing and sowing of the spring and winter crops

can be spread in the same village over a longer period. The cost of a pair of plough bullocks varies from Rs. 50 to Rs. 250, and Rs. 90 may be taken as the average price of a pair of bullocks, with a working life of seven years. From what has been explained before regarding their feeding conditions, it will be easily understood that their upkeep costs little. Moreover, this cost is more than made up by the profit derived from the reproduction of the live stock, so that, all that need be taken into account here is the initial cost of the bullocks. Thus Rs. 4 per annum per acre of cultivated land seem to cover the cost of cultivation, so far as the items of implements and live stock are concerned, allowing for interest on the expenditure on these heads.

As regards labour, only the cost of the labour actually hired should be considered here, and not the cost of the labour of the cultivator himself and of his family, for his actual outlay is the problem really under examination here. The upper classes of Hindoos regard any form of manual labour as below their social status, and if they have any land in their actual possession, they get it cultivated by a payment in lump. Again, there are several families of cultivators, who used to conduct their agricultural operations themselves, but who, on account of large profits obtained before the War owing to the high price of jute, began to keep one or two agricultural servants living with them on annual wages sometimes as high as Rs. 48 with food, and thus became gentlemen of leisure, and who find it hard to give up this ease, although the profits from jute have temporarily declined. Such cases, however, are not very common, and the cultivating classes usually hire labour only for weeding and harvesting operations. For ploughing and sowing, labour is hired very seldom, the work being done either by the cultivator himself or by a system of co-operation or exchange of labour among neighbours. Instead of hiring ploughs, bullocks and labour, he obtains the use of his neighbours' stock and labour in

exchange for similar services to be performed by himself. In weeding and harvesting also the same system of co-operation prevails, but to a less extent. Whatever labour is hired, is generally employed for weeding, especially when jute, which requires careful weeding several times, is grown on a large scale, and for harvesting. In the latter case, the amount of labour hired depends upon the exigencies of the season, an unexpected flood necessitating the employment of a large amount of labour. The employment of hired labour for weeding and harvesting is, however, sometimes a luxury rather than a necessity, because some families of cultivators, who do their own ploughing, sowing and transplantation, and who can find the labour for weeding and harvesting in their own homes, nevertheless employ hired labour for these operations, because the presence of the crop makes it easier for them to obtain credit from the moneylender in order to pay wages to the hired labour and to remain idle themselves. The wages depend upon the value of the crop, the conditions of the season, and also upon the human element. They must be lower in villages, where the population is very dense and where the proportion of those who possess just the subsistence holding or even less, is large, than in villages, where the number of resident ryots, whose social status prevents them from cultivating their own fields, and of those ryots, who possess more than the subsistence holding, is considerable. The ordinary wages of a labourer are 6 or 8 annas per day and food, but during the weeding and harvesting seasons, the rate may rise to Re. 1 per day and food. Wages in kind, as in harvesting the boro crop, when the labourer is usually paid at the rate of $\frac{1}{3}$ of the harvested crop, if worked out in cash, prove to be even higher. Assuming that for weeding, harvesting and preparing the product for the market, a cultivator hires the same amount of labour as that supplied by himself and his family, the average payment for the labour hired for these operations, may be taken at Rs. 4 per acre in the case of

broadcast aman and Rs. 12 per acre in the case of jute, for which more careful and frequent weeding is required, and the preparation of which for the market is a more laborious process.

Finally the rent, the taxes, and the abwabs, which the cultivator has to pay may be reckoned at Rs. 5 per acre. The Settlement Officers do not regard this collective item as a part of the cost of cultivation, and so far as rent is concerned, they have the support of economic theory. But taxes and abwabs must be regarded as burdens upon the land, and as parts of the cost of cultivation, and rent also must be taken into account in a similar manner, when the resources that are available to the cultivating class for its prevailing standard of living, have to be found out. This will become clear from the examination of the relation between rent and standard of living that will be made in a later chapter.

CHAPTER III.

THE COMMERCIAL AND INDUSTRIAL WEALTH OF THE DELTA.

The commercial and industrial wealth of the delta is much smaller than its agricultural wealth, which was examined in the previous chapter. While agriculture supports 80 per cent. of the total population of the delta, industries and commerce support only 6 and 7 per cent. respectively. The latter two proportions are far smaller than those in the western countries. The small proportion in the case of industries is due to the more or less decadent condition of the majority of the cottage industries and to the absence of factory industries. The small proportion in the case of commerce is the result of the fact that most of the cultivators have had hitherto few wants which their land has not supplied. Moreover, markets called *hats* are scattered so profusely over the delta that a cultivator can go to a new one every day of the week without going more than 4 or 5 miles from home and every market is attended by hundreds of cultivators. ✓The existence of so many markets so well attended means that the supply of commodities, which are produced on the land and change hands between one cultivator and another, is kept very much in the hands of the cultivators themselves. They employ no entrepreneurs, and there is little retail trade in agricultural produce except in towns. Consequently, there has not hitherto been much opportunity for the development of the distributing trade. There is of course a certain amount of collecting trade by dealers who buy up jute, rice, betelnuts, chillies, etc. in rural markets and bring them into the towns or forward them to Calcutta, ✓but in all parts of the world collecting and wholesale

trades employ fewer persons than distributing and retail trades for dealing with equal quantities of commodities.¹ The small traders are almost invariably Bengalis, chiefly of the Shaha, Teli, Banik, Jogi, Pal, Tanti and Basak castes. So are most of the jute commission agents and other middlemen. In the larger bazars, however, Marwaris, Agarwalas, and other up-country men are found dealing in jute, hides and imported goods, chiefly cloth.

The larger part of the commerce of the delta is water-borne, and only the smaller part is carried by the railways. Trade is carried on with Calcutta by means of large steamers, which ply between numerous stations on the Brahmaputra, Padma and Meghna, and Goalundo station connected with Calcutta by rail, or between these stations and Calcutta directly through the Sunderbans. Trade with Chittagong, the second most important port in Bengal for foreign trade, is carried on by similar steamers *viâ* Chandpur connected with Chittagong by rail or direct with Chittagong through the Meghna estuary. The collection of the raw materials for export, the distribution of the imported commodities and the purely internal trade in local products are largely carried on with country boats, which can reach almost every corner of the delta, when the rivers, streams and creeks are full. Consequently, most of the centres of trade and markets are situated on the banks of rivers. In the more important centres—the importing and exporting marts—trade is carried on daily, and they are attended by petty tradesmen, who purchase goods, which they afterwards sell in the village markets, and also by the *beparis* who sell to the big exporting merchants various kinds of agricultural produce, which they have purchased in the village markets or in the houses of cultivators. Some of these places conduct a trade annually worth several lakhs of rupees, but their untidy and dilapidated

¹ Cf. Bengal Census Report, 1921, pp. 392-4.

appearance fails to suggest their real importance. The houses and shops usually consist of buildings with walls of bamboo mats or reeds filled in with mud and with corrugated iron roofs. They are closely huddled together, and the pathways connecting them are full of mud during the rainy season.

✓ Then in larger villages, hats or village markets of various degrees of importance are held once or twice a week. ✓ They are generally centrally situated with regard to the surrounding villages. They present a still more untidy appearance. The centre of each of these villages has a large space covered with low shelters, where the market or hat is held once or twice a week, to which the cultivators of the surrounding villages flock to sell their surplus produce and to make purchases. ✓ The proprietary right of the landlord in the ground on which the hat is held has always been recognised, but the intention of the Government originally was to allow the public free use of it without any charge by the landlord. An enactment to this effect was passed in 1790, but remained a dead letter as the custom of deriving a substantial profit out of the hat was too strong, and had to be repealed in 1871.

✓ The hats are ordinarily managed by landlords through *ijaradars*, who annually pay to the landlords sums varying according to the importance of the hats, for the right to levy tolls on the temporary stall-holders and a commission on the articles sold. Hats vary considerably in importance, but vegetables, milk, fish, fruit, oil, rice, salt, pulses, etc. are sold in all of them, and black-smiths, toy and ornament dealers, cloth-merchants and country liquor vendors are in attendance to supply the needs of the villagers. In the more important markets are sold English glass, mirrors, crockery, lamps, stores, hardware, shoes, cigarettes, medicines, writing materials, blankets, etc. In addition to these regular hats, fairs are annually held at various places in the delta, generally in connection with some religious festival, and much buying and selling are done at these fairs.

Finally there are the hawkers or peripatetic tradesmen, who bring various articles to the very door of cultivators living in the remotest villages. The VEDIYAS, gypsies of the delta, both men and women, but especially the latter, are great experts in this trade. They are the agencies by which the out-of-the-way villagers are supplied with cheap foreign goods. They have no fixed abode but generally live in boats with their families. The total value of the trade carried on in this way in the delta is very large, although no notice is taken of it, because it is carried on so quietly.

The jute trade is the most important of all the trades and is conducted by a chain of middlemen. The cultivators usually sell their jute to petty traders called *beparis*, who go to villages and markets with boats. The cultivators ordinarily do not take advances on their crop and receive only from $\frac{1}{2}$ to 1 Rupee less per maund than the price actually paid by the shipping merchants. It is true that they have not much opportunity of finding out the state of the market, but they try to secure as high a price as possible, and not infrequently hold up their crop, if the price is low, and if they foresee possibilities of a rise in it. The *beparis* carry the fibre to *aratdars* or brokers, who have advanced them money, and who get a commission of about 2 annas per maund. Some *beparis*, however, possess their own capital on a small scale, and deal direct with the jute merchants. They are mostly a class of illiterate men, who are not always honest, and who frequently endeavour to cheat the cultivators at the time of weighing the fibre and to water it fraudulently before selling it to the merchants. Yet they are a very necessary link between the cultivators and the merchants. The *aratdars* possess substantial means, and godowns of their own for stocking the fibre before it is sold to the merchants. They have a minute knowledge of the different qualities, are in close touch with the conditions of the market, and unlike the *beparis*, have a reputation for honesty.

Narayanganj and Chandpur are the most important centres of jute trade, where the merchants, largely European, have their head-offices, godowns, and hydraulic presses, while several mofussil centres are situated in all the jute districts. Usually the fibre is not classified into several qualities at the time of its sale to the merchants, but after the price has been determined on the basis of the sample provided, a few bundles are opened, and if the quality is found to be below that of the sample, a reduction in the price previously agreed upon is made. There are no regular markets at the jute centres, but the traders bring their boats loaded with jute to the godowns of the merchants and endeavour to sell it. If the price offered is not satisfactory, the traders carry their loads to another merchant, and in this way sometimes visit several godowns before selling them. The merchants, however, do not depend entirely on their purchases at head-quarters. They have also their agents at the mofussil centres of trade, and from July to November, their tugs may often be seen passing up and down the rivers, towing a number of large country boats, sometimes empty, sometimes loaded with jute.

After the jute has been purchased by the merchants, it is classified into different qualities and pressed into bales for purposes of transporting it easily. If the fibre is intended to be used in the Calcutta mills, it is pressed less tightly by means of hand presses into katcha bales weighing from $3\frac{1}{2}$ to 4 maunds. The fibre to be exported to Europe is pressed in hydraulic presses into pacca bales weighing 5 maunds, which are as hard as stones, and which are generally sent to Chittagong *viâ* Chandpur and thence to Europe. The katcha bales originally intended for use in Calcutta are sometimes rebaled into pacca bales for export to Europe. The fibre is divided into six classes according to its strength, length, colour, gloss and fineness. (1) Hessian-warp is a strong, long and fine fibre of good gloss and silvery white colour. Its thread is used as warp for weaving the better qualities of hessian cloth.

(2) Hessian-weft is inferior to the first only in length and gloss, and is used as weft for weaving the above kinds of cloth. (3) Sacking-warp is strong and long but coarser than 1 and 2. Its thread is therefore used as warp for weaving sacks. (4) Sacking-weft is weaker and shorter than (3) and is used as weft for sacks. (5) Rejections are the barky or knotty fibres which are used as sacking weft after being softened in oil and water. (6) Cuttings are the hard portions at the top or bottom of the fibre. They are also used as sacking weft after being softened or they are used for making paper. The bales are graded into 1's, 2's (green), 2's (red), 2's (ordinary) \times 2's, 3's, Good 3's, \times 3's, 4's, Good 4's and \times 4's according to the different proportions of the different qualities of the fibres mentioned above that they contain. The bales are also stamped with definite marks of the balers, each specified mark being a guarantee of a particular quality and grade of jute.

It is surprising to find that, although the bulk of the jute grown in Bengal is grown within the delta, and although it has been found practicable to work successfully a jute mill in Madras and Cawnpore, the manufacturing industry in jute does not exist at all in the delta, not even a single mill being erected in one of the centres of jute trade. At first sight it is difficult to understand why no mills should exist in such centres as Narayanganj, Chandpur or Chittagong, why the people of the delta should have totally neglected the large profit to be obtained from manufacturing their own raw materials, and why the European firms, even from the narrow view of their own interests, should incur the expenditure of sending raw jute to Calcutta for manufacture instead of manufacturing it on the spot. However, there appear to be several reasons for the complete absence of the manufacturing industry. In the first place, it is regarded as essential that the manager of a mill should be in direct and close touch with the market for its finished products, if it is to have any chances of success. But this requirement is considered to be

a great obstacle in the way of starting a mill at one of the centres mentioned above, because the market for manufactured jute is entirely concentrated in Calcutta. Secondly, there is the labour difficulty. During the busy season, considerable difficulty is felt in obtaining sufficient labour even for the existing jute presses. A mill of moderate size will require 5,000 men, all of whom will have to be imported from up-country, and it is doubtful how far such importation will work satisfactorily. Thirdly, for the successful working of a mill, all the principal kinds of jute must be available; but the varieties grown in North Bengal and Bihar are not available in these centres. Fourthly, even if the working of mills were to become practicable, all their output will have to be sent to Calcutta, where the market, as mentioned above, is concentrated, and the saving in freight secured by sending jute to Calcutta manufactured instead of raw, will be inappreciable, because it has been calculated that jute loses only about 5 per cent. of its volume and weight in the process of manufacture. Moreover, this small gain will be more than counterbalanced by the considerable cost of bringing coal and mill stores from Calcutta, and by the inconvenience that will result from the absence of large engineering firms capable of repairing and altering machinery. In addition to all these difficulties, the fact remains that the attention of all the capitalists is concentrated on the Calcutta market and the mills on the Hooghly, and they are not likely to be attracted by any projects in the trade centres mentioned above without reasonable expectations of substantial advantages. It must be admitted that these difficulties are real, but it does not follow that they are unsurmountable. It will be necessary to examine later whether they are so or not, because there can be no doubt that the economic loss to the delta on account of the absence of the manufacturing industry in respect of a staple, which it grows in large quantities and which it has to export entirely in its raw state, is great, and that, if the

difficulties can be overcome, the increase in the wealth of the delta, upon which the welfare of its people largely depends, will be large.

Internal trade in rice is carried on, on a considerable scale, districts like Mymensingh, Dacca and Faridpur, whose resources consist largely of jute, importing rice from those districts, especially Bakarganj, whose main production consists of this crop. The former import a fair amount of rice from Rangoon also, while the latter export to Calcutta, West and North Bengal and Assam also. Petty rice traders (beparis) collect the rice from village markets, carry it to the exporting centres, and sell it there to large merchants. It is largely moved by country boats, and a comparatively small, but growing portion of it is moved by steamers. There is a great variety of these boats, which in their shape proclaim the parts from which they come.

The leather trade may be divided into the export of hides and skins, the curing and tanning of leather, and the manufacture of boots, shoes and other articles. Both in volume and in value, the first is by far the most important part of the trade. Chamars and butchers sell hides and skins to Mohammedan beparis, who export them to Calcutta. In addition, a large quantity is collected in the districts by the agents of exporting European firms. The price has varied considerably from time to time, especially since the War, but the average price paid to the chamars and butchers in normal times for 20lbs of medium quality of hides may be taken at Rs. 14, and the average price paid for the same by the European firms of Calcutta at Rs. 19, the charges for collecting and the collector's profits thus amounting to about Rs. 5 per 20lbs. The butcher has to pay a fair price to the owner of the animal, by slaughtering which he gets the hide or the skin among other things. But the chamar gets it from a carcass, for which he has not to pay anything, and the whole profit goes to him. The hides exported are mostly badly cured and are not tanned

at all. Better curing is quite practicable, and the quality of the hides will be much improved thereby, but the trade has not yet been properly organised, and as the exporting merchants are willing to pay only a slightly higher price for well-cured hides than for badly cured ones, the incentive to a general improvement in curing is lacking. The methods of tanning also are crude, and there are no large tanneries. Locally tanned leather is used only for making the roughest kinds of articles. All the leather used by the shoe-makers is imported from outside, most of it being tanned in Agra or Cawnpore. As regards the manufacturing industry, although every town has its colony of shoe-makers, the major portion of the leather goods consumed is imported, largely from Calcutta and Cawnpore and to a smaller extent from outside India. The old and new Swadeshi movements, however, have given some permanent stimulus to the local industry by reducing the sale of English boots and shoes. The economic conditions of the workers are not satisfactory, the ordinary workers earning from Rs. 12 to 15 per month, and only the head artisans earn from Rs. 20 to 30.

Until the beginning of the last century, the cotton-weaving industry flourished in the delta, and its fabrics were famous in many parts of the world. Dacca was the great emporium of this trade, and the fabrics were sent to China, Turkey, Syria, Arabia and Persia and later to Provence, Italy, Spain and England. The Dutch, the French and the English Trading Companies had large factories in Dacca. But under the competition of the cheaper machine-made Manchester goods, the industry gradually languished, and lost much of its importance. The old Swadeshi movement gave some stimulus to it, but the new movement has failed to do so, because it requires that the yarn used should be hand-spun, whereas only machine-made yarn is suitable for the looms and workmanship employed in the industry. Still the industry possesses considerable importance to-day.

	Number of Handlooms (In thousands).	Handlooms per million of the population (In thousands)	Handlooms per sq. mile.	Proportion of looms with fly-shuttle (per cent.) ¹
Bogra ..	1.9	1.8	137	15
Pabna .	8.6	6.2	466	34
Dacca ...	11.8	3.8	432	54
Mymensingh ...	11.6	2.4	185	8
Faridpur ..	8	3.5	136	75
Bakarganj ..	6.9	2.6	198	56
Tippera ...	12.4	4.5	486	7
Noakhali ..	9	6.1	596	9

¹ Bengal Census Report, 1921, pp. 400-1.

The Tantis and Jugis among the Hindus and Jolahas among the Mohammedans are the chief castes working in this industry. The persons engaged in the work are considered somewhat inferior in the social scale, but the status of the industry is not regarded as quite low. The Tantis, who weave the finer fabrics, were prosperous when the industry was in a flourishing condition. The other castes usually weave the coarser qualities of cloth. Large numbers belonging to these castes have had to abandon their caste occupation of weaving, owing to the decline of the industry, and have taken to agriculture as their sole means of livelihood.

The industry is entirely a cottage industry, and not a single spinning or weaving mill exists in the delta. Until the early part of the last century, the yarn used to be spun by hand locally, but it was gradually driven out of existence by the British machine-made yarn. The main advantages of the latter were that it was uniform in size, and that any amount of a particular quality could be obtained without difficulty. A considerable saving of time and labour was rendered possible by it, because more than half of the time spent in turning out

the finer qualities of cloth had to be devoted previously to visiting the different markets in order to collect a sufficient quantity of hand-spun thread suited to their manufacture. Moreover, British yarn was much cheaper than the Indian. All the yarn used in the industry now is British, and the old art of spinning with the hand fine thread suitable for the manufacture of fine fabrics has been completely forgotten. The price of dyed and undyed yarn has gone up immensely in recent years and causes bitter complaints on the part of the weavers who assert that the only hope of an improvement in their economic position lies in a reduction in its price by some means or other.

Ordinarily, there is no division of labour either in the preliminary processes of sizing and warping the yarn or in the later process of weaving. The weaving is still largely done by the old hand-looms, but the fly-shuttle is gradually coming into greater use. The products of the looms may be divided into fine and ornamental fabrics and ordinary goods. The weaving of the famous Dacca muslins has now stopped, because there is no demand for them; but the art has not yet been completely forgotten, and although the finest muslins cannot now be woven as the more expert weavers are long dead, muslins with thread of 400's counts can still be produced, and somewhat coarser muslins are still exported to Upper India and Nepal for wearing apparel. The muslins being very costly are mostly purchased by Rajas and Nawabs and occasionally by Europeans. Then there are the kashidas of 60 different varieties, *i.e.* muslin pieces embroidered by hand with silk or coloured cotton thread, mostly by poor Mohammedan women, and to a small extent by males belonging to the cultivating class during the period when they have nothing to do in the fields, and used by Mohammedans at the time of praying and as turbans, etc. Formerly kashidas were exported to Turkey in large quantities, because every Turkish soldier wore a kashida pagree, but the export has greatly

of the delta and have a considerable local sale as they are cheap and durable, and satisfy the taste of the middle classes, who are the main purchasers of these goods. For these ordinary kinds of cloth also the weavers generally use British yarn. Before the War, the yarn required for an ordinary 10 cubit piece of cloth used to cost Re. 1 to the weavers, but now it costs Rs. 3. The cloth formerly fetched Rs. 4 but now brings in Rs. 6. Consequently, the money wages of the weavers have remained the same *viz.* 10 annas per day, although the cost of living has increased considerably. In order to finish one piece, five days are required, 2 days for setting up the warp and three days for weaving. The weavers generally take up a set of eight pieces together, and finish it within 40 days. Ten annas are the daily income of clever weavers above the average. The ordinary weavers cannot earn more than 6 annas a day, although they work for 7 or 8 hours. Usually they commence work at 6-30 A. M. and continue till 10-30 A. M. Then they go to the bazar for buying the necessaries of daily consumption, work for an hour or so at mid-day till their meal is prepared by their womenfolk, take a little rest after the meal, start work again at 3 P. M. and continue till dusk. At night they do no work.

The economic condition of the weavers is far from satisfactory. The income of the ordinary weavers is lower than that of even the small cultivators. The average earnings of the former come to about Rs. 12 per month, while those of the landless agricultural labourers amount to Rs. 15 and food. The village carpenters and blacksmiths also earn more, their average being about Rs. 15. Therefore, had it not been for the fact that nearly 80% of the weavers supplement their earnings from their profession by engaging in agriculture, the number of weavers would have been much smaller than it actually is. The main reason for this unsatisfactory position is the fact that almost all the weavers are dependent upon the mahajans for the materials of their industry. Four methods

are used by the mahajans in their dealings with the weavers. (1) Loans in cash are made to some weavers for the purchase of yarn, and are repaid either in cash at a rate of interest never below 50% per annum or in cloth valued much below its market price. (2) Raw material up to a certain amount is advanced to other weavers on the condition that the first cloths up to a certain number turned out by them each month are given to the mahajans, the weavers retaining their freedom to sell the remainder as they choose. (3) Raw material is advanced on the condition that the whole product made according to definite patterns, is made over to the mahajans, who pay the weavers wages based on the time required to turn out each article, the weavers being practically servants. This is the most common method. (4) Raw material is advanced by the mahajans to master weavers, who undertake to produce definite kinds of cloth, and who pay the actual weavers wages based on the time taken for producing each cloth. Usually a fair price is paid by the mahajans to the master weavers, but the wages paid by the latter to their workmen are low.¹ In justice to the mahajans it may be mentioned that these methods are not without some advantage to the weavers, who are saved the trouble of obtaining the raw material and of marketing the finished products. Moreover, the mahajans often pay them wages in advance, and help them with loans in times of difficulty. But the facts remain that the major portion of the difference between the price of the finished product and that of the raw material required for it, is appropriated by the mahajans, and that the actual weavers are left struggling in poverty and ignorance at the lowest possible wages. The rise in the price of the raw material since the War has been very harmful to the actual weavers, because the mahajans have managed to maintain their percentage of profit on their outlay, and too excessive a price for the articles has

¹ Cf. Ascoli's Report on the Development of Cottage Industries in Bengal, Appendix 3.

been prevented by denying any rise of wages to the actual weavers in spite of a considerable rise in the cost of living. If any weavers, without possessing a sufficient capital of their own, attempt to sell their own articles, they are compelled either to sell them at the first price offered, which is generally very low, or to borrow at an exorbitant rate of interest, in order to obtain the raw material necessary for continuing their work. Those few weavers, who possess enough capital of their own, and are therefore independent of the mahajans, are able to earn from Rs. 20 to 25 per month. When engaged in special and costly work such as the weaving of silk and gold thread saris, they may earn as much as Rs. 50 per month, but such cases are exceptional, the demand for these articles being very small. These weavers purchase the yarn from the retail dealers and sell their products direct to the purchasers. However, they have no organisation for marketing their products.

The conch-shell industry is one of the oldest in the delta, but has been confined entirely to the town of Dacca. The industry has survived on account of the fact that custom has made the use of bangles compulsory in the case of all married Hindu women. Ordinary bangles are made in various places in the delta, but the conch-shell bangles made in Dacca are distinguished from them by their superior artistic value, and are much in demand. Besides bangles, the industry turns out churis, bracelets, chains, rings, buttons, etc. of various designs and patterns. These articles are sometimes set with pearls, rubies or gold, which increase their beauty, and of course price. The artisans in this industry have realised better the importance of economising labour than their fellows in other industries, and have carried out a certain amount of division of labour, different workmen working at different processes and stages. Thus the spiral is broken out by a person, who is expert in this work only. The shell is then cut into rough bangles with a special saw by another, who has specialised in

this process. The work of polishing the bangles by rubbing them against a sand-stone can be done by all men and even by boys. However, ornamental designs and patterns can be worked on the bangles with fine tools by expert artisans only. The other articles are made out of the parts that remain after the bangles are cut out, and beads are made out of spirals. The small pieces and dust, that are left, are sold off at Re. 1 or Re. 1-8-0 per maund for making lime. The raw materials of the industry, *i. e.* the conch-shells are obtained from Ceylon, Madras, Travancore and Baroda. Those obtained from the two Native States are the best on account of their milk-white colour and uniformly large size, but the quantity is comparatively small. Those coming from Ceylon and Madras are much larger in quantity, amounting to about 10 and 5 lakhs respectively, but their quality is inferior on account of their reddish colour, and their size varies considerably. Recently the workers in this industry have formed a co-operative society, which has succeeded in making a contract for two years for the purchase of Tuticorin shells at the rate of Rs. 210 per thousand direct from the producers without the intervention of middlemen. The industry is entirely in the hands of Shankharis, who form a distinct caste by themselves and live in Shakhari bazar in the town of Dacca. Nearly 2000 workers are engaged in this industry. A few of them are well off, but the bulk are poor.

The manufacture of mother-of-pearl buttons is another important cottage industry, which exists mostly in a number of villages in Dacca district. The shells are obtained from fishermen in various parts of the delta generally through middlemen. The central pearl and shell market is, however, at Demra in Dacca district. Men cut out suitable pieces from the shells, and the rest of the work is done by women with very simple implements. The buttons are not, therefore, of uniform size, shape and thickness, and the holes in them are not equidistant from each other. All the buttons are brought

to Nangalband every Friday and sold to merchants. The economic condition of the workers is not satisfactory, and they have to supplement their earnings by resorting to agriculture. Various kinds of ornaments such as ear-rings, nose-pendants, hair ornaments and watch chains are also made from the shells, and buttons are made from horns, but these articles are not produced on a large scale.

The fishing industry is also one of the important indigenous industries of the delta, and is still conducted according to the old methods. Middlemen known as ijaradars secure leases of fishing rights along rivers or bils from landlords either annually or for a term of years, and supply boats and nets to fishermen, who pay from one to five rupees per month per boat, and who have only their labour to supply in the business. The fishermen seldom deal direct with the public, but generally sell their catch to middlemen called nikaris, who convey it by boat to the nearest land nikaris, who again carry it to the market and sell it there. The fishing trade thus employs a large number of people besides the actual fishermen. By far the larger part of the fish is consumed locally, but a fair amount of fresh and salted fish, mostly hilsa, is exported to Calcutta from such centres as Goalundo, by the Eastern Bengal Railway. Fish, which cannot be sold fresh, is cut up in the compound and dried in the sun on mats of reed or bamboo protected by nets from crows and kites. Fish-drying is confined mostly to the districts of Mymensingh, Bakarganj and Tippera, and the product is partly sold in other parts of the delta and partly exported to Chittagong and North Bengal. A certain amount of fish-oil is obtained by boiling the heads and entrails of fish. The oil was used locally for burning, and was also exported to Calcutta. Since the general introduction of kerosine oil, however, this use of the oil has ceased, and its only use now is in the preparation of lubricants for machinery. Thus this source of the income of the fishermen has now lost most of its value.

Fishermen as a class are not in a prosperous condition, and the earnings of most of them are less than those of the cultivators among whom they live, with the exception of some of the mathbars who secure leases of fishing rights direct from the landlords. Most of them have to supplement their earnings from their profession by taking to agriculture during the non-fishing season. The main reason for their poverty is the fact that a very large part of the earnings of the industry is appropriated by the various middlemen. It has been calculated that in the district of Mymensingh, of the total earnings 40 per cent. go to the landlords and the non-fishing ijaradars, 30 per cent. to the intermediary nikaris who sell the fish in the bazars, leaving only 30% to the fishermen, and conditions in this respect in the other districts appear to be much the same.

There are also other industries in the delta, but their products are entirely consumed locally, and they are more or less in a depressed condition on account of the competition of imported wares. For cooking, eating and drinking the Mohammedans mostly use copper utensils. These are produced in several centres by men belonging to the Kansari caste, although in some places other castes also have taken up this work. A class of men called Paikars travels in the villages, collects broken and old utensils, and sells them to the mahajans. The latter get them melted down and made into new utensils by artisans. Bell-metal utensils are almost wholly made by melting down the old utensils. Of all the alloys made locally, a mixture of copper and zinc called "Bharan" is the most extensively used. Of the two methods of making the utensils, hammering and casting into moulds, the first is followed almost exclusively. The braziers with the help of their hammers and furnaces beat out the plates to any shape they want. The industry suffers from the competition of imported enamelled ironware for which a very large demand exists among the Mohammedans.

In addition, the organisation of this industry, like that of many others in the delta, is unsound. The majority of the workers have no direct dealing with the consumers of their products, and are at the mercy of the mahajans, who supply them the required metal, and take away the finished ware from them, after paying them wages at fixed rates per seer, the rates depending upon the quality of the articles produced. The local shops do not advance capital to the artisans, but they do so to the mahajans and obtain their supply of the wares through them. In many cases, between the workers and the mahajans, there is another class of middlemen beparis, who take away the metal and money from the mahajans, give them to the artisans and carry the manufactured products to the mahajans. Under these conditions, it is not surprising that a large part of the earnings of the industry is secured by the mahajans, and in addition, the beparis, wherever they exist, obtain a substantial share. Consequently, the average wages of the artisans amount to only Rs. 15 to 18 per month, and they just manage to live somehow, especially as only the adult and able-bodied males can take part in the work, the other members of the family being incapable of rendering any help. In spite of, or rather because of, this condition of the workers, the mahajans can easily make a profit of 30 per cent, on their capital engaged in this industry.

The iron and steel industry may be divided into the work of the ordinary village blacksmiths and the industry in cutlery, steel trunks, etc. conducted by more qualified artisans. Higher branches of the industry, such as railway and other workshops and iron foundries, do not exist at all, with the exception of the railway workshop at Dacca. No iron is smelted in the delta, and all the iron and steel used in the industry are imported. Most of the larger villages have blacksmiths, who are usually Hindus, and who turn out tools employed in agriculture and handicrafts and household

utensils. With these products there is little competition on the part of imported articles. The price of the raw material is also small as compared with the price of the finished article. The blacksmiths are independent of the mahajans, and their womenfolk also can earn for themselves if they choose. The blacksmiths earn about Rs. 20 per month during the busy season, and supplement their income during the slack season by agricultural work. Hence, this is one of the few industries in the delta, in which the actual workers are prosperous.

Fairly good cutlery is turned out only at two places in the delta, Duttapara in Noakhali and Uzirpur in Barisal, but its sale is small, and almost the whole of the consumption of cutlery in the delta consists of imported wares. The manufacture of steel trunks, cashboxes, despatch boxes, etc. from imported iron sheets is carried on in the district towns, and is a fairly paying industry, but a large number of Calcutta made trunks find a ready sale on account of their superior finish and the better quality of the sheets used.

Most of the larger villages have carpenters also, who make doors, cart-wheels, agricultural implements, such as ploughs, dhenkis for husking rice, ghanis for oil-mills, weavers' looms, etc. Like the blacksmiths, they earn about Rs. 20 per month during the busy season, follow agricultural pursuits during the rest of the year, and on the whole are well off. The boat-builders and dugout-builders are more centralized carpenters, and their colonies exist in one or two villages of most of the districts. Dacca is noted for its house boats, and its artisans are in demand throughout the delta either for building, or for supervising the construction of these boats. The carpenters in towns have to satisfy a different kind of demand, *viz.* the demand for articles of furniture and wood-work for houses. In most of the towns, a part of the demand is met by the local carpenters, who turn out rude tables, chairs, benches, bedsteads, taktaposhes, etc.

but in the larger towns the quality required by the richer Indians and the Europeans cannot be produced locally, and such articles have to be imported from Calcutta. It is surprising that there is not a single firm of high-class furniture and cabinet makers in the delta. The carpenters in towns earn from Rs. 20 to 30 per month.

The potters generally combine agriculture with their occupation, in fact with many of them pottery is only a secondary occupation. Ordinary pottery is produced in all parts of the delta, and fine specimens, artistic in shape, well-burnt, and with a good shining black and red polish, are turned out in Dacca, Mymensingh and Barisal. The industry, however, has declined considerably in recent years owing to the increasing use of metal ware, which has gradually taken the place of earthenware. The price of the raw materials of the industry such as chan grass, earth and fuel has also gone up immensely during the last few years. Consequently the average earnings of the potters amount to only Rs. 12 to 15, and they have to depend largely upon agriculture for their livelihood.

The only sugar industry in the delta is the manufacture of jaggery or gur, the demand for which has increased considerably in recent years, on account of the improvement of the material condition of the rural population and of the means of communication in the interior. However, the cultivation of sugarcane tends to be supplanted by that of jute, which yields larger profits in normal years, which is easier to grow, and which yields a quicker return than sugarcane. Consequently the local production of jaggery falls far short of the requirements of the delta, and large quantities of jaggery are imported from other parts of India, largely from the United Provinces; but nearly $\frac{4}{5}$ of the refined sugar imported into the delta consists of foreign sugar. Iron mills have now completely supplanted the old wooden roller mills for crushing the cane and the earlier iron mills with two vertical rollers have also

mostly given way to the more effective three roller mills. Experiments for determining the relative efficacy of the three kinds of mills show that, if 100 lbs. of cane are crushed, the wooden, the two roller iron, and the three roller iron mills yield 48, 58 and 75 lbs. of juice respectively. Groups of cultivators hire iron mills and pans for boiling the juice from firms which maintain depots at different cane-growing centres. The rate of hire varies from 12 annas to Rs. $1\frac{1}{2}$ per day, which is divided among the cultivators who use the mill and the pan, and the average expenditure under this head has been estimated at from Rs. 15 to 40 per acre of sugar-cane.

Half a dozen power mills for crushing mustard seed exist at different centres in the delta, and are earning good profits, the seed used being all bought locally. The industry is very profitable, because the consumption of the oil is large, it being the oil most generally used for cooking and toilet purposes. Only a part of the mustard seed grown in the delta is, however, crushed locally, the rest is exported, and therefore the production of the oil supplies only a small part of the total demand, the remainder being met by importing the oil from Calcutta. Thus there is a large scope for the expansion of this industry.

It is thus seen that the commercial and industrial wealth of the delta is far smaller than its agricultural wealth, although the potentialities of its development are very great. Its commerce consists mostly of the export of raw materials and the import of finished products, and although the smaller middlemen of commerce are the children of the soil, the larger middlemen, to a considerable extent, are Europeans and up-country men. In industrial development the delta is very backward. Moreover, most of the cottage industries have been declining, and there has been a pronounced tendency towards reversion from industries to agriculture. Thus in the weaving industry during the past few years, there has been a reduction of about 20% in the number of looms at

work.¹ Again, the fact that it is difficult to find weavers below the age of 18, seems to show that the youths of the weaving castes are abandoning their traditional occupation in favour of agriculture. The decadent condition of the cottage industries and the poverty of the artisans are also seen in the large proportion of workers to dependents in cotton weaving, metal work and horn, ivory and shell carving, the proportion being 40%. It is true, however, that these percentages are to some extent affected by the nature of the industry concerned and the social customs of the different castes and localities.

The decline of the cottage industries has been due to unsound organisation, the domination of middlemen, the lack of improved implements, failure to economise labour and the unsatisfactory economic conditions of the workers. The mahajans, as seen before, usually advance money to the artisans for the purchase of their implements, they supply the raw material on credit, obtain the articles turned out according to specific designs in return for their advances, paying the artisans wages for their labour, and market the articles themselves. They appropriate by far the larger portion of the earnings in most cases, paying the workers barely a living wage. Sometimes, the number of middlemen is unnecessarily large. Consequently, the economic conditions of most of the actual workers are unsatisfactory, although generally they supplement their earnings from industrial pursuits by performing agricultural work, and their total income is usually smaller than that of the professional agriculturists. Therefore, there is naturally a tendency among them to abandon their caste occupations and to become professional agriculturists. Even if the mahajans were to pay a due regard to the interests of the workers, to advance them money for the purchase of implements at a reasonable rate of

¹ Cf. Ascoli's Report on the Development of Cottage Industries in Bengal, p. 3.

interest, to supply them with raw material at fair prices, and to allow them a liberal return for their labour, the whole organisation is unsound for commercial purposes, because the mahajans combine in themselves four spheres of activity, which would be completely separated under a well-organised system, *viz.* the provision of capital, the supply of raw material, the work of supervision and design, and the work of marketing the finished articles. Even if they were to perform the first two functions satisfactorily, they are not in a position to do the same with regard to the other two functions, which, however, are equally important for commercial success. Hence, the present organisation of the cottage industries suffers from three main defects, *viz.* a lack of knowledge regarding the requirements of the market, an inability to develop the market and an incapacity to deal with anything except the regular normal supply.

It is true that all the artisans have not remained wholly uninfluenced by the industrial changes of the past century. In some cases they work with superior raw materials. The weavers use mill-made yarn, the brass-smiths sheet metal, the black-smiths iron rolled in convenient sections, with consequent reduction in the cost of production. But the implements used by the artisans and their methods remain in most cases the same as those which have been used by their forefathers for several generations. Consequently, the technique of industry has in most cases remained crude as compared with that now obtaining in Western countries, and therefore the stress of competition is felt more severely than would have been the case if the implements had been improved upon. Again, a failure to economise labour is equally noticeable in many cases. A cottage industry does not always require a single person to go through all the processes of production, and in most such industries with proper organisation, considerable division of labour is practicable. But in most such industries in the delta there is no division of labour whatever.

Thus, in the weaving industry, although several looms may be gathered together in a single house, each weaver works altogether independently of the others. Each prepares his own work, reels his own bobbins, prepares his own size, sizes his own yarn, and then does the weaving himself. The women render no assistance. The waste of labour can be realised if it is mentioned that all the work previous to the actual process of weaving can be performed by comparatively unskilled labour. It is only in the conch-shell and bell-metal industries that some division of labour is resorted to, but even in them there is room for further improvement.

Some people may doubt the advisability or even the practicability of maintaining and strengthening the cottage industries, on the ground that they cannot compete with factory and machine production. But the fact, that they have shown sufficient vitality to withstand and survive the competition of the factory system for a full century, is most significant and cannot be ignored. Their survival cannot be regarded as the result either of philanthropy or of patriotism on the part of the people of the delta. It is true that in the past they have been helped by difficulties of communications, which hampered, to some extent, the inrush of foreign goods, but against this advantage must be set the disadvantages, which they have had to bear on account of a most defective organisation, a very faulty method of marketing and a total lack of any endeavours to improve the crude and antiquated implements. Their survival in the face of the competition of foreign factory industries appears to be due to a number of factors. In the first place, the products turned out by many of them are works of indigenous art, which cannot be supplied by the foreign factories. Secondly, the survival of the weaving industry appears to be due to the facts that the middle classes are willing to pay a somewhat higher price for hand-woven cloth than for machine-made cloth, on account of the greater durability of the former that results from more

careful sizing and less strain on the yarn in the course of weaving, and that custom prescribes the use of a number of specialized types of cloth, the demand for which does not exist on a sufficiently large scale to make it profitable for the factory industry to produce them. Thirdly, the brass industry is still helped by difficulties of transport on account of the size of the vessels usually in demand, and in addition the Hindus have a strong social prejudice in favour of such vessels of home manufacture. Fourthly, the very low wages paid to the artisans keep down the cost of production. Fifthly, the manual skill of the artisans is really of a high order not only in their traditional occupations but also in the new industries to which they have turned their attention, in spite of the fact that they have to use crude implements. As an example of the latter may be mentioned the remarkable and rapid progress of the button industry in Dacca and Tippera districts. Sixthly, most members of the artisan castes have been very faithful to their hereditary occupations, and have abandoned them only when compelled to do so by want. And lastly, the mahajans, in their own light and according to their own limitations, have endeavoured to maintain the industries, in which their money is locked up, and which are the source of their income.

It is thus seen why the cottage industries have survived the competition of foreign factory industries. But will they be able to compete with local factory industries, when they come to be established? The establishment of the latter is a question of time, as the delta is rich in raw materials, as it provides a large and steady market for finished goods of various kinds, and as the general level of intelligence of the people is fairly high in spite of their conservative habits, and when the difficulties in respect of capital and organisation are removed, factory industries will be gradually created in the delta. For the examination of this problem, the cottage industries may be divided into two classes, *viz.* industrial arts

and manufacturing industries. Although this division is not precise, and although the two classes overlap to some extent, it may be said that factory industries will not be able to compete with industrial arts as a whole. Thus, cloth-embroidery, fine ornamental weaving of finer counts, conch-shell carving and the manufacture of bell-metal articles are sure to remain hand industries, although their methods of work and organisation require considerable improvement. It seems very improbable, however, that the manufacturing industries will be able to survive the competition of local factories. But this does not mean that it will be a waste of money, time and energy to endeavour to arrest their decline and to improve their condition. The factory system will take many years to be established in the delta to any considerable extent, as the processes of overcoming the shyness of capital for industrial purposes and of the effective and up-to-date organisation of labour, supply of raw materials, methods of production and ultimate distribution of the manufactured goods, are very difficult and slow. In the meantime, the strengthening of cottage industries will facilitate the creation of factory industries by affording the necessary basis. It is now generally recognised that the rapidity of the change from the cottage to the factory system in England was much promoted by the facts that the cottage system had reached a high degree of organisation, and that the highly skilled artisans were available for work at once in the factories. The second condition exists in the delta, but the decline of the cottage industries has the effect of reducing the supply of such artisans. The first condition does not exist in the delta, but it is only after the cottage industries are effectively organised and supply the necessary basis, that a sound and rapid development of factory industries will become possible. Moreover, it is possible that some of the manufacturing cottage industries even will be able to withstand the competition of factories. For instance, it is possible that certain kinds of hand-made cloth will continue to be preferred

for reasons of their lasting qualities. The fact that the Bengal Home Industries Association, when it was doing active work, was able to sell in Bombay itself such cloths made of cotton grown in Bombay, and spun in Calcutta, at prices a little higher than those of articles of similar quality turned out by the Bombay mills from cotton grown near at hand, is not without its lesson.

Again, although the artisans are conservative, they are quite ready to take to improved implements, if they become convinced that they are better than their own tools, and if they can afford them. But so far little has been done to bring them to the notice of the artisans and to demonstrate their advantages to them. A weaving school has been in existence at Serampur, outside the delta, but within Bengal, but such a central institution remains unknown to the artisans living at a distance, and the artisans living in the neighbourhood have the feeling that the demonstrations conducted by the school are carried on under superior conditions, which they cannot hope to reproduce in their own homes. It has had, therefore, but little educative effect on the classes for whose benefit it was started. Similarly, a number of monographs on various industries, drawing attention to defects and advocating improvements, have entirely failed to bring about any improvement in the cottage industries of the delta. What little has been done, has been the result of inter-communication among the artisans themselves. Thus, some time ago, a gentleman of the town of Dacca, purchased a Hattersley hand-loom of the improved type with the intention of working it himself. As he failed, however, to carry out the intention, it was purchased by a rather progressive weaver of a neighbouring village. His neighbours quickly discovered its advantages and purchased similar looms for themselves, and the use of this kind of loom has spread to a number of localities. Again, soon after the Bengal Home Industries Association had demonstrated to a

small group of weavers in Dacca the advantages of using a cage for reeling bobbins, other weavers discovered its advantages from that group, and in this way the use of the cage spread quickly. These examples show that there is no innate difficulty in the way of inducing the artisans to adopt improved appliances, provided that the two conditions mentioned above are fulfilled.¹

It is thus seen that although factory industries will gradually come into existence in the delta, it is both desirable and practicable to strengthen the position of the cottage industries. The means to this end will be examined in a later chapter.

¹ Cf. Ascoli's Report on the Development of Cottage Industries in Bengal, p. 6.

CHAPTER IV.

THE LAND AND REVENUE SYSTEMS OF THE DELTA.

Historical Development.

Some knowledge of the land and revenue systems of the delta is essential for a proper understanding of its economic life, because they have vitally affected it, but the full significance of the systems, as they exist now, cannot be grasped without knowing how they have come to be developed. It is therefore necessary to deal at some length with their historical development since the establishment of the British rule.

With the exception of a small portion of the Sundarbans, which is included in the district of Bakarganj, and which is temporarily settled, the land revenue of the delta is fixed under the Permanent Settlement concluded by Lord Cornwallis in 1793. In 1765 the titular Emperor of Delhi made a perpetual grant to the East India Company of the Diwani of Bengal, Bihar and Orissa. Diwani meant the office, jurisdiction and emoluments of a Diwan, a financial minister charged with the collection of revenue and possessing large powers in all civil and financial cases,¹ and therefore the grant of the Diwani meant the grant of the right to collect the revenue of these provinces and to exercise judicial powers in all civil and financial cases. In this case, however, it was not merely the right of collecting the revenue that was assigned, but the revenue itself was perpetually granted to the Company, subject to certain payments. The Company's

¹ Cf. Field, Landholding and the Relation of Landlord and Tenant, p. 458.

servants, however, having been wholly engaged in the pursuit of commerce, had no knowledge either of the conditions of land-holding or of the prevailing revenue system in the delta. Moreover, there were no written rules or plain principles, by studying which they could acquire this knowledge, because under the Mogul administration, no survey had ever been made in the delta, no records of previous assessments had been kept, and in latter years the revenue-collecting staff had deteriorated under the corrupt and feeble government. The collection of revenue was therefore left in the hands of the native officials as before, and in 1769, English supervisors were appointed merely to superintend the collection. The revenue-collecting agency had, however, fallen into such a decay, and had become so corrupt, and consequently the Company's losses became so heavy that in 1772 the Company was obliged to undertake the collection of the revenue direct, and for this purpose the district supervisors were transformed into collectors, each of whom was assisted at his head-quarters by a Diwan or financial adviser. An endeavour was made to secure a better collection of revenue by farming all estates to the highest bidders for a period of five years, irrespective of the rights claimed by the Zamindars, in the belief that the natives knew the real annual value of the estates better than the English officials, and that they would not bid more than they could really afford to pay.¹ The adoption of this system proved ruinous, because speculators, who were ignorant of the capacities of the land, but who hoped to make a profit by means of oppression and extortion, engaged to pay sums, which later they found that they could not pay, although many estates were left ruined and deserted.² When the quinquennial settlement expired in 1777, annual settlements were made for some years, but the authorities realised more

¹ Cf. Shore's Minute of 18th June, 1789, p. 95.

² Cf. Fifth Report of the Committee of the House of Commons, p. 371.

and more that they were ruinous to agriculture, and consequently to the general prosperity of the delta. Moreover, the complaints of the dispossessed Zamindars, most of whom had soon to be reinstated, had attracted the attention of the House of Commons and the Court of Directors.

In 1784 the Act for the "Better Regulation and Management of the Affairs of the East India Company" was passed, which directed the Court of Directors to give orders "for settling and establishing upon principles of moderation and justice, according to the laws and constitution of India the permanent rules, by which the tributes, rents and services of the rajas, zemindars, polygars, talukdars and other native landholders should be in future rendered and paid to the United Company." The Court of Directors in transmitting orders to this effect to India, directed that the settlement should be made with the zamindars as far as possible, that the rights of other classes should be maintained according to the prevailing customs, that the settlement should be concluded for ten years, and that, when it was completed, all the papers should be sent to them to enable them to fix the revenue permanently.¹ Lord Cornwallis was sent to India to carry into effect the provisions of the new Act, and he was assisted by Mr. (afterwards Sir) John Shore.

Lord Cornwallis found that among the different classes of claimants for the settlement of the land revenue the most eligible were the zamindars. But the latter themselves were a heterogeneous body of men differing in historical origin and actual position. Some of them were the descendants of the old Hindu and Muhammadan rulers of the country, who had been conquered by Akbar; others represented the great landholding families, which had become *de facto* rulers in their own territories during the later Muhammadan rule on account of its sufferance or favour and had paid a fixed tribute only.

¹ Cf. Field, Landholding, etc., pp. 487-8.

A third, the most numerous class, consisted of men, whose ancestors had held the office of revenue collector for one, two or more generations. It appears that originally the office was not hereditary, but that it became so when the Mogul Government became too feeble to offer any resistance.¹ The Sanad, which conferred the office of revenue collector and was the source of all rights enjoyed by him, became a mere form, and in later times the zamindar succeeded to his estate simply by inheritance, sometimes obtaining a Sanad afterwards, sometimes neglecting to obtain one at all. Although these zamindars actually increased their power by gradual encroachments upon the powerless Mogul Government, in theory they continued to be mere collectors of revenue *i.e.*, officers of government. At the time of the grant of the Diwani to the Company, the disparity between their actual position and their theoretical rights was such, that according as the former or the latter was taken into account, they could be regarded as absolute proprietors or mere officers of state. Those, whose attention was directed to the first two classes of zamindars, and the actual position of the third class, felt that a zamindary was a hereditary proprietary right in the soil, similiar to an Englishman's right in his estate, and those who laid stress on the theoretical position of the last class maintained that a zamindary was merely an office, which had become hereditary as all offices in the East tended to become.² The truth appears to have been between these two positions, because whereas an English landlord or freeholder, in what is termed in English law the fee simple, possesses full power to deal with the lands belonging to his estate, as he likes, to turn

¹ Cf. Harington's Analysis, Vol. III, p. 361.

² Examine, for instance, the famous Grant-Shore controversy. Grant in his Political Survey of the Northern Circars, published on 20th December, 1784 (Appendix XIII of the Fifth Report), maintained the first view, which was vigorously opposed by Shore in his minute of 2nd April 1788, who maintained that "the rents belong to the sovereign; the land to the zamindar."

out his tenants, whether for life or for a certain number of years, on the expiry of their leases, and then to increase the rent as much as he can, the zamindars in the Bengal delta had no such absolute powers over their tenants, whose rights in the land were not inferior in validity, although subordinate in degree to those of the zamindars. The Company's Government, however, after some discussion decided that, if originally the zamindars had no proprietary rights in the land, they had acquired them later, which would justify the Government in making a settlement with them, as the nearest approach to the English landlords, and as the class most likely to occupy ultimately the same position in the delta,¹ and this view was accepted by the Court of Directors. So a decennial settlement of land revenue was concluded with the zamindars in 1790-1 on the basis of the previous temporary settlements, as any detailed enquiries regarding the yield of crops and the rates of rents had been prohibited by the Court of Directors, who were afraid of creating discontent.

Soon afterwards Lord Cornwallis expressed himself strongly in favour of making this settlement a permanent one on the ground that the zamindars would not regard their title to their estates as secure unless the revenue assessment was fixed permanently, and that therefore a settlement with the zamindars could not be productive of much good unless it was made permanent. He wrote, "I may safely assert that one-third of the Company's territory in Hindustan is now a jungle inhabited only by wild beasts. Will a ten years' lease induce any proprietor to clear away that jungle, and encourage the raiyat to cultivate his land, when at the end of that lease he must either submit to be taxed *ad libitum* for the newly cultivated lands, or lose all hopes of deriving any benefit from his labour, for which perhaps by that time he will hardly be repaid."² With regard to the first part of his argument, Lord

¹ Cf. Cornwallis' minute of 18th September, 1789, the Fifth Report, Vol. I, 590.

² *Ibid.*

Cornwallis failed to realise that a re-assessment based on an increase in the value of land or a rise of prices could not unsettle fixed property rights any more than an enhancement of the income tax would unsettle the rights of a capitalist in his property.¹ The second part of his argument was answered by Shore who was opposed to making the decennial settlement permanent, and who stated that, at a time when governments were rising and falling, ten years would be regarded by natives as equivalent to permanency, and that the cultivated area had already increased considerably since 1770.² Shore was of opinion that a permanent settlement would be very injudicious, unless the real capacity and value of the land were ascertained carefully by means of detailed inquiries and unless the relations between the zamindars and the raiyats were defined and adjusted, with definite rules for the maintenance of the rights of the latter against the pressure of the former. Cornwallis believed that a further delay would not materially increase the knowledge of the Company's Government regarding the capacity of the land,³ that, if the zamindars were made proprietors subject to the payment of land revenue fixed for ever, they would themselves adjust their relations with the raiyats to the satisfaction of both the parties, and that all that would be required would be for the Government to reserve a general power of intervention on behalf of the raiyats, if such intervention became necessary in the future.

The Court of Directors after discussing the question for two years, agreed with Lord Cornwallis, and the decennial settlement that had been made with the zamindars, independent talukdars and other actual proprietors of land was declared permanent by a proclamation dated 22nd March 1793, which was embodied in the statute book as Regulation I of 17 '3, and which has been called the "charter of landed aristocracy

¹ *Cf.* Guha, *Land Systems of Bengal*, p. 86.

² *Cf.* Baden Powell, *Land Systems of British India*, p. 347.

³ *Cf.* *Introduction to Bengal Records*, p. 24.

in Bengal.”¹ But “no claims for remission or suspension of rent were to be admitted on any account, and the lands of proprietors were to be invariably sold for arrears.”² The only safeguard provided for the rights of the raiyats was as follows: “It being the duty of the ruling power to protect all classes of people and more particularly those, who from their situation are most helpless, the Governor General in Council will, whenever he may deem proper, enact such regulations as he may think necessary for the protection and welfare of the dependent taluqdars, raiyats and other cultivators of the soil.”³ The Court of Directors appear to have been influenced most by Cornwallis’ view that nothing except a permanent tenure and a fixed assessment would induce private individuals to reclaim the vast area of cultivable waste land, which the Government could not reclaim itself. They seem to have thought that it was desirable for this reason to abandon all claims to any future increase of land revenue that could be legitimately asserted from the extension of cultivation and other sources pertaining to land, and that the sacrifice entailed thereby would be made up by the general increase of revenue that would result from the growth of population and the increase in the prosperity of the country.⁴

The Permanent Settlement, thus, created for the zamindars a complete proprietary title, saleable, heritable and subject only to the payment of a fixed land tax, out of the imperfect and indefinite rights, which they had previously enjoyed by virtue of Sanad or custom, and placed all the different classes of zamindars mentioned before on a uniform legal basis, by removing all the former differences in their customary status, which had resulted from differences in historical origin.⁵ A zamindar as established by the

¹ Cf. Sarada Charan Mitra, *Land Laws of Bengal*, p. 93.

² Section 7, Reg. I of 1793.

³ Section 8, Reg. I of 1793.

⁴ Cf. *Introduction to Bengal Records*, p. 82

⁵ Cf. *The Administration Report of Bengal, 1911-12*.

Permanent Settlement is defined by Harington as follows : " A landholder possessing a zamindari estate, which is heritable and transferable by sale, gift or bequest ; subject under all circumstances to the public assessment fixed upon it ; entitled after the payment of such assessment to appropriate any surplus rents and profits which may be lawfully receivable by him from the under-tenants of land in his zamindari or from the alteration and improvement of untenanted lands ; but subject nevertheless to such rules and restrictions as are already established or may be hereafter enacted by the British Government for securing the rights and privileges of raiyats and other under-tenants of whatever denominations, in their respective tenures, and for protecting them against undue exaction or oppression." ¹ The Permanent Settlement could not give the zamindars an absolute property in the soil, because the Government could give away only those rights, which it had possessed, and these did not include all the interests in the land. The authors of the Permanent Settlement admitted that according to the customary law of the country the raiyats had rights which the government could not take away, and the judgment given in the Great Rent Case of 1865 has legally established that the Permanent Settlement neither did nor could affect the tenant rights in any way. Practically, however, the Settlement introduced a great change, because while it definitely recognised and secured the rights of the zamindars, this was not done with regard to the rights of the raiyats until after 66 years.

The safeguards, which Cornwallis thought would be sufficient for protecting the rights of the raiyats, were three. The first was the statutory injunction on the zamindars to deliver to their tenants pattas or leases specifying the area of the holding, the conditions of the tenancy, and the rent payable, which was never to exceed the established pargana rate,

¹ Harington's Analysis, Vol. III, p. 228.

and with which all demands were to be consolidated so as to prevent the imposition of fresh abwabs, subject to the approval of the Collector in order to prevent the introduction of new clauses or covenants ; the second was the deposit with the Collector of the standard of measurement, whereby the areas of holdings might be guaranteed ; and the third was the provision for keeping the accounts of the raiyats by the Kanango and the village Patwari, which would have secured the permanency of the rates.¹ These safeguards were thus intended to make the raiyats secure in the possession of certain areas of land on certain specific conditions and at specific rates of rent.

In practice, however, these safeguards failed completely. The zamindars either evaded the grant of leases, or granted them at higher than customary rates, in which cases the raiyats declined to take them up. Even when the rates were no more than customary, those raiyats, who claimed rights of occupancy, refused to accept the leases in the belief that thereby they would jeopardise their rights,² as the term of the leases was restricted to ten years and suggested the possibility of eviction at the end of that period. Moreover, there lurked in the minds of the raiyats the fear that the lump sum in leases representing the consolidation of all demands, as required by the Regulation, would soon come to be regarded as a new *asal* or original rent, to which additional abwabs or cesses might be tacked. Furthermore, " since the great famine of 1770, the customary rates of land in lower Bengal were in excess of the economic rent which could be obtained for it,"³ and the rather fictitious pargana rates would have been perpetuated by the acceptance of the leases. The rules for the maintenance of accounts and records of rights proved equally futile. Until 1793 the Patwaris or village accountants were

¹ Regulation VIII of 1793, Sections 54, 55 and 59.

² Cf. Selections from the Records of the East India House, p. 338.

³ Bengal Manuscript Records, p. 62.

the servants of the village community and were paid in part by Government grants of land and in part by the raiyats. But the Permanent Settlement made them the servants of the zamindars, and they naturally began to keep the village accounts and the records of rights in ways which suited the interests of their masters. The office of the Kanango, who was the recorder of rights under the Mogul system, also became a zamindari department under the Permanent Settlement and was abolished in 1827. Finally, the number of district revenue officials at that time was too small to enable them to conduct proper investigations into the rents charged by the zamindars in addition to the performance of their ordinary work.

The position of the raiyats was made worse by Regulation IV of 1794, which empowered the zamindars to recover rent at the rates mentioned in leases, although the raiyats might not accept the rates. This practically meant, as Field points out, that the zamindars could claim any rates they liked, distrain the tenants' crops, and put on the latter the onus of proving that the rates demanded were not the established ones. The raiyats became desperate, simply refused to pay any rent whatever, and suits in the courts for the recovery of rent became so numerous that the zamindars found it very difficult to obtain decrees. Many of them, therefore, fell into arrears of the payment of revenue to the Government, and their estates had to be sold in accordance with the very strict rules laid down by Regulation I of 1793. There were also other causes for the defaults in the payment of revenue. The proportion of the rental of the estates appropriated by the Government as land revenue was as large as 90% at that time, and demanded the most careful management of their estates on the part of the zamindars to enable them to make their payments regularly. But this was too much to expect from the zamindars of the delta, who were accustomed to leave the management of their estates to dishonest and inefficient

agents, and who were burdened with the maintenance of their costly retainers.¹ Further, the power of alienating estates given by Regulation I of 1793 to the zamindars proved a fruitful source of their ruin, as it induced them to get deeper into debt or to neglect the management of their estates in a greater degree, and then to make a liberal use of their new power of sale. The result of the working of these factors was that within a few years after the conclusion of the Permanent Settlement most of the bigger zamindar families, which had survived the confusion of a century, were deprived of their estates, of which they had been declared proprietors only a few years before. It was a veritable social revolution affecting a large number of estates.

The zamindars set up an agitation that the Government could not expect them to pay revenue regularly, unless the punctual payment of rent to them by the raiyats was assured to them in all cases by granting them larger powers against the recalcitrant raiyats. The Government, badly in need of money to prosecute the war against Tipu Sultan, and frightened by this loss of revenue, consented to strengthen the hands of the zamindars, and enacted the notorious *Haftam* or Regulation VII of 1799, which gave the landlords almost unrestrained right of distraint of all personal property of the raiyats and, in some cases, of arresting their persons for arrears of rent without sending any notice to any court or public officer. Further, the Regulation required Magistrates to punish the raiyats, who could not prove their complaints against the landlords or their agents, and directed the civil courts to indemnify zamindari officers for all losses that they might have to suffer from being improperly summoned. Field comments upon this regulation in the following terms. "There is scarcely a country in the civilised world, in which a landlord is allowed to evict his tenant without having

¹ Cf. Hunter's Introduction to the Bengal Records, p. 100.

recourse to the regular tribunals; but the Bengal zamindar was deliberately told by the Legislature that he was at liberty to oust his tenants if the rents claimed by him were in arrears, leaving them to recover their rights by having recourse to those new and untried courts of justice, the failure in which might be punished with fine and imprisonment.”¹

This regulation was passed in the belief that the zamindars would make only a fair use of the powers conferred upon them by it, and that in cases of hardship the courts would be able to give relief to the raiyats. But these expectations were not realised, and it was found that the powers were abused by the landlords on a large scale for the purposes of rack-renting, and that the raiyats on being reduced to want by the distraint of their property, had no resources left to enable them to demand justice from the courts. Thereupon, there was a strong revulsion of official feeling, and as in any case there had been no intention of limiting the actual rights of the raiyats by the above Regulation, Regulation V of 1812 called the Pancham was passed to mitigate the evils of the former. This regulation abolished the power of arrest, and although the right of distraint remained, its severity was reduced by the rules which laid down, firstly that a written demand upon the defaulting tenant must be made before distraining his property, secondly that the implements and live stock required for agriculture must be exempted from distraint, and thirdly that all attachments for rent must be withdrawn, if the tenant gave security, undertaking to institute a suit within a fortnight to contest the landlord's demand. But under the Pancham as under the Haftam, in all proceedings of the courts, the burden of proof lay upon the raiyats, and as the rights of the raiyats were in no way defined even in the Pancham the root of the evil remained untouched.

¹ Landholding, etc., p. 581.

At the present time, it appears strange that the Government should have passed regulations, which on the face of them could not have failed to be used as engines of the oppression of the raiyats. It should therefore be remembered that at that time they were regarded as absolutely necessary for the regular realisation of the Government revenue. It was believed that, as the Government possessed the power of selling the estates of those zamindars who fell into arrears of revenue, the zamindars in their turn must be armed with the same powers against those of their tenants, who failed to pay up their rent. It was only gradually grasped that there was a great difference between the position of the raiyats and their landlords. While the Government had fixed for ever the revenue which the latter had to pay, and while the accounts of their payments were carefully and accurately maintained in the Collectorates, these valuable advantages were denied to the raiyats in the payment of the rent.¹

In the meanwhile, the position of the raiyats grew worse. Up to 1822 no raiyat could be evicted at the will of the purchaser of an estate sold by auction for arrears of revenue. He could at most be asked to pay the full pargana rate, and could be evicted only if he refused to do so. But Regulation XI of 1822 empowered auction-purchasers to eject at their will all tenants, with the exception of khudkhast kadmi raiyats, *i. e.*, resident and hereditary cultivators possessing a prescriptive right of occupancy before the Decennial Settlement. Although the provisions of this Regulation were meant to be applied only to the estates which had been sold for arrears of revenue, the power of the zamindars was such, that the principle contained in the provisions was used by them to increase the rent of all tenants, except the small class mentioned above. In addition to this enhancement of rent, that was unsupported by law, the authorised increase of rent in the

¹ Cf. Radharaman Mookerjee, *Occupancy Rights*, p. 63.

estates, which were purchased by auction, produced the effect of raising the prevailing rate, which by law could be applied to all lands in the neighbourhood.

The Regulation XI of 1822 was repealed by Act XI of 1841, which was still more unfavourable to the raiyats as it gave the auction-purchasers the amplest powers of exacting rack-rents from the raiyats, by empowering them to increase at discretion the rent of all raiyats and to evict them, excepting the small class of khudkhist kadmi raiyats mentioned above. This Act was repealed by Act I of 1845, which, however, reproduced the above provisions verbatim. With regard to these acts, Field observes: "There can be little doubt that no feeling of moderation on the part of the purchasers restrained them from using to the utmost the facilities, which the Legislature had placed at their disposal, for exacting the highest rent that could be wrung from the cultivators.....They (moneylenders and successful legal practitioners) bought estates at a speculative investment, and expected to make the most of their bargain.....The legislation.....placed them in a position of abnormal superiority detrimental to the rights and interests of the raiyats. The insecurity of tenure and the mischievous power of annoyance, interference and extortion, which these laws have given to the auction-purchasers have been fatal obstacles to agricultural improvement and have proved the source and the instrument of oppression and wrong."¹ Sir H. Ricketts described in 1850 the effects of the sale of an estate in the following terms. "Affrays and litigation cannot but ensue.....There being no record of the protected, he (the new landlord) assumes that none are protected... I can imagine no condition more pitiable than that of the inhabitants of a zemindari transferred by sale for arrears.....All the tenures of all classes are open to revision.....to the tenants of an estate a sale is as the

¹ Landholding, etc., pp. 667-9.

spring of a wild beast into the fold.....The consequence must be a recasting of their lot in life, with the odds greatly against them."

Thus, up to the passing of Act XI of 1859, the zamindars were given powers against the raiyats far greater than those which had been granted to them by the original settlement of 1793. The chief aim of all the legislation of this period was the security of the public revenues, and successive regulations increased the powers of the landlords who had to pay the land revenue, in order to enable them to realise their demands from the raiyats, whether justified or not. The result was that the proprietary right, that had been granted to the zamindars by the Permanent Settlement, gradually grew into a right much greater than the English fee simple, and that all other rights in the land were ignored. Moreover, whenever estates were sold for arrears of revenue, the auction-purchasers were allowed to destroy all subordinate rights in the land that had been created after the Permanent Settlement, and to obtain the estates free of encumbrances. As such sales were very frequent, most of the ancient zamindars, who had regarded their interests as bound up in some measure with those of their tenants, disappeared, and their place was occupied by a class of people who had enriched themselves by taking advantage of the confusion of the times, and who, possessing as they did large powers granted by law to repudiate all engagements entered into by the previous landlords with the raiyats on the estates purchased by them, were most oppressive in their demands. Their hands were further strengthened, as the gradual increase of population from the peace and order established by the British gave rise to competition among the raiyats for cultivable land. It has been calculated that at the time of the passing of the Tenancy Act of 1859, the rent roll of the Bengal landlords had increased to five times what it had been at the time of the Permanent Settlement, and there is little doubt that the bulk of the increase consisted of rack-rents

and illegal cesses squeezed out of the raiyats.¹ It is true that every Regulation provided for redress against injustice by referring the injured raiyats to the civil courts, but the constitution and procedure of the courts at the time were such that even the most clear cases of extortion frequently remained unrelieved.²

The year 1859 marks a turning point in the history of the land and revenue systems of the delta. The Court of Directors and the Company's Government in Bengal had from the beginning realised the necessity of protecting the rights of the raiyats in a definite manner. But, in the first place, as mentioned above, security of the regular realisation of land revenue was regarded as an object of paramount importance, and it was thought imperative for this purpose to strengthen the hands of the landlords against the raiyats. Secondly, measures for the protection of the rights of the raiyats could not be devised without a detailed inquiry into their rights and liabilities, but the district revenue staff at first was far too inadequate to undertake such an inquiry, in addition to the heavy work that was thrown upon it by the Permanent Settlement in the shape of land litigation, land sales, etc. So the position of the raiyats had gradually become worse until by 1859 it became nearly desperate, and agrarian peace and prosperity in the delta were seriously threatened. The evils of the prevailing system had become so patent, that the Government felt the urgency of taking active steps to safeguard the rights of the raiyats, and it was now in a position to do so, as the numerical strength of the district revenue staff had by this time increased considerably. Therefore Acts X and XI of 1859 were passed, which inaugurated a new era in the history of land legislation in the delta, and which may be described as the first modern tenancy laws.

¹ Cf. Imperial Gazetteer, Bengal, Vol. I, p. 123.

² Cf. The Administration Report of Bengal, 1911-12.

Act X of 1859 was the first real attempt of the Government to fulfil the pledge of protecting the rights of the raiyats that had been given sixty-six years before, at the time of the Permanent Settlement. The Act distinguished between raiyats, who had acquired a certain status, and those who were tenants-at-will, and divided the raiyats into three classes, namely, (1) those holding land at fixed rent since the Permanent Settlement, through their predecessors,¹ (2) those holding the same land for twelve years or more, whether at fixed rent or not, (3) those holding for less than twelve years. The raiyats belonging to the first class, called tenants-at-fixed rates, were protected from all enhancement of rent in the future. Those of the second class were given a right of occupancy, and were declared entitled to remain in occupation of their holdings as long as they paid the rent on account of the same. They were thus protected from arbitrary eviction and rack-renting, which generally go together. If a landlord possesses the power of ejecting his tenants, he can raise the rent to a very high level, because if they refuse to pay it, he can evict them, and because he knows that they are so much attached to their ancestral land, that rather than leave it, they would submit to almost any exaction.² The Act further laid down that in cases of dispute the rent previously paid by the occupancy tenants should be regarded as fair and equitable, unless the contrary was proved, that their rent could be increased only for certain specified reasons and by a certain procedure, that they could be evicted only by a judicial decree, that they could not be compelled to attend upon the zamindars, and that their crops could be distrained for the arrears of rent of one year only. Raiyats of the third class, not having rights of occupancy and called tenants-at-will,

¹ As it was difficult to prove this, the Act laid down that it was to be presumed that, if the rate of rent had not been altered for 20 years, it had not been altered since the Permanent Settlement.

² Cf. Guha, *Land Systems of Bengal and Bihar*, p. 140.

were declared entitled to pattas or leases only at such rates as might be agreed upon between them and their landlords. The Act was amended by Act VIII of 1869, but the modifications were in details and not in principles.

Act XI of 1859, which contains practically the whole of the existing law regarding sales of estates on account of arrears of revenue, gave back to the raiyats some of the rights of which they had been deprived by Act XI of 1841 and Act I of 1845. The auction-purchasers retained the right of cancelling all the tenancies and encumbrances that might have been created after the Permanent Settlement, but the following tenancies could not be touched: (1) Tenures held at fixed rent from the time of the Permanent Settlement. (2) Tenures existing at the time of the Settlement, but not held at fixed rent. The rent of these tenures could, however, be raised according to the prevailing law. (3) Talukdari and similar tenures created after the Settlement and held immediately of proprietors, and farms for certain periods held in the same manner, provided that the tenures and farms had been registered. (4) Leases of lands on which permanent buildings had been raised or on which gardens, tanks, canals, places of worship, etc., had been made; but their rent could be enhanced according to the prevailing law.

Although it was hoped that the above two Acts would protect the rights of the raiyats in a substantial degree, the practical working showed several defects in them. In the first place, the raiyat found it very difficult to prove his title to occupancy rights. The Courts of law, with rigid impartiality, required him to prove that he had held every particular field of his holding for twelve successive years, and as reliable village records did not exist, it was often impossible to give the proof to the satisfaction of the Courts.¹ Therefore, to prevent the creation of occupancy rights, landlords resorted

¹ Sec. 6, Act X of 1859.

to the stratagem of evicting the tenant just before his twelve years were completed, and then reinstating him in the same fields or prevailing upon him fraudulently, by taking advantage of his ignorance, to change the particular fields he had held for others in the same village, before his twelve years were over. Secondly, the raiyat was allowed to contract himself out of the acquisition of occupancy rights, and he, in his ignorance, was frequently prevailed upon to do so by the landlord. Thirdly, the occupancy raiyat was not protected from a continuous increase of rent, because, although the Act specified the grounds upon which an increase might be demanded, it did not mention any time, which must elapse before the rent, once increased, could be increased again, and therefore allowed the landlord annually to demand an increase in the rent.¹ Fourthly, the raiyat's right to make improvements in his holding was not defined and no provision was made for compensating him for them in case of his eviction. Fifthly, every instalment of debt, that was not paid on the exact date, on which it was due, was made an arrear, and the landlord was allowed to institute a separate suit for each of such instalments. As the instalments were commonly due every month, the landlord could incessantly harass the raiyat in this manner.² Sixthly, the law regarding distraint could still be utilised by the landlord for reducing the raiyat to abject poverty by obstructing the disposition of his crops.³ Seventhly, no recognition was given to any of the important local tenures with their special features, which had been developed in different districts, with the result that the holders of these tenures, who had paid considerable sums for them, and who had generally been regarded as possessing a heritable interest at a fixed rent, became liable to increase of rent, and were placed upon the same footing as new occupancy raiyats, who had

¹ Section 16, Act X of 1859 and Sec. 17, Act VIII of 1869.

² Sec. 20, Act X of 1859, and Sec. 21, Act VIII of 1869.

³ Sec. 112, Act X of 1859 and Sec. 68, Act VIII of 1869.

paid no premium upon entry. Finally, the Act placed great difficulties in the way of the landlord, who sued for a perfectly legitimate enhancement of rent, as under it the courts of law required him to furnish the difficult proof that the value of the produce had increased in the same proportion as the enhancement of rent demanded by him.¹

As the defects of the Acts of 1859 gradually came to light, and as they failed to give substantial protection to the raiyats, agrarian discontent increased and finally resolved itself into violence and riots. This pressed the question of tenancy law reform to the front, a Rent Law Commission was appointed in 1879 to prepare a digest of the existing statute and case law relating to landlord and tenant and to draw up a consolidating Bill. The Commission presented its report and draft Bill in 1880, and after prolonged deliberations, the Bengal Tenancy Act of 1885 was passed, which was the most important measure passed after Regulation I of 1793, and which with certain modifications made later, remains the prevailing law on the relation of landlord to tenant. The principles underlying the Act are based upon a system of a fixity of tenure at judicial rents, and its three chief aims are, firstly, to give the settled raiyat the security in his holding, which he had possessed under the old customary law; secondly, to give the landlord a fair proportion of an increase in the value of the produce of the soil; and thirdly, to frame rules by which all disputes between landlord and tenant can be simplified and settled upon equitable principles.²

The Act of 1859 did not define "tenant" or "raiayat," "tenure" or "holding," and used the term "tenure" confusedly to denote the interest of both a tenure-holder and a raiyat, although the incidents of a raiyat's holding differed from those of a tenure. The Act of 1885 ended this confusion by

¹ Cf. Administration Report of Bengal, 1911-12.

² *Ibid.*

dividing tenants into three classes—tenure-holders (including under-tenure-holders), raiyats and under-raiyats and defining the status of each. Tenure-holder is defined as a person, who has acquired from a proprietor or from another tenure-holder a right to hold land for the purpose of collecting rent or bringing it under cultivation by establishing tenants on it, and includes also the successors in interest of persons who have acquired such a right.¹ Raiyat is defined as a person, who has acquired a right to hold land for the purpose of cultivating it with his own labour or that of the members of his family or that of hired servants, and includes also the successors in interest of persons who have acquired such a right.² Under-raiyat is defined as a tenant holding land immediately or mediately under raiyats.³ If the land held by a tenant exceeds 100 standard bighas, he shall be presumed to be a tenure-holder until the contrary is shown.⁴

The Act has simplified the acquisition of occupancy rights by providing that the raiyat need not hold the same land for twelve years in order to acquire them, but that, if he has held any land for twelve years within the boundaries of the same village, he should be given the status of a “settled raiyat” and occupancy rights in all the fields, which he may hold in the village at present or in future.⁵ For the purpose of making the proof easy, the Act creates a presumption in favour of the raiyat, and throws upon the landlord the onus of disproving the raiyat’s claim to an occupancy right.⁶ It prevents the occupancy raiyat from contracting himself out of his status,⁷ restricts his liability to ejectment by definite rules,⁸ gives him the power to make improvements on his holding, and enables him to recover his outlay in case of eviction.

¹ Sec. 5, Cl. 1.

³ Sec. 4, Cl. 3.

⁵ Section 21.

⁷ Section 178.

² Sec. 5, Cl. 2.

⁴ Sec. 5, Cl. 4.

⁶ Section 20.

⁸ Section 25.

The Act contains important provisions regarding rent and its enhancement. But in order to understand their significance it is necessary to examine the nature of rent, as it has prevailed in the delta. Under the Hindu and Muhammadan rule, the rent payable by the raiyat was fixed by the sovereign, and it was recognized that any arbitrary power of the landlord to raise rent was inconsistent with the raiyat's rights in the land. It has been already seen that the Permanent Settlement cannot be regarded as having limited the rights, which the raiyats had already acquired, and that in 1793 the Government specially reserved the right to interfere on their behalf. But little that was effective was done to regulate rent till 1859. The increase of population that took place in the meanwhile, gave rise to a competition for land, which the zamindars could turn to their advantage, on account of the position and power given to them by the Permanent Settlement. Moreover, a large part of the cultivable land of the delta was waste in 1793, and was gradually let by the zamindars on their own terms. When the rent exacted from some raiyats was once enhanced, by some means or other, it became the prevailing rate, and then it was easy to raise the rent of the other raiyats in the neighbourhood to the same pitch. The influence of custom was arrested further and competition rents were stimulated by the revenue sale laws, under which a large number of estates were auctioned, and which allowed the auction-purchasers to cancel the engagements which the previous landlords had made with the raiyats. The result of the operation of all these factors was that in the matter of the enhancement of rent, the majority of the raiyats were entirely at the mercy of the landlords, which rendered their position very precarious. Endeavours were made to check the evil by means of the Act of 1859, but they were not very successful until the Act of 1885 was passed.

In 1862, Sir Barnes Peacock, the then Chief Justice of Bengal, declared that rent in the delta was "economic" rent as defined by Malthus, *viz.*, "that portion of the value of the

whole produce, which remains to the owner of the land after all the outgoings belonging to its cultivation, of whatever kind, have been paid, including the profits of the capital employed estimated according to the usual and ordinary rate of agricultural capital at the time being." But in 1865 a Full Bench of the Calcutta High Court in the Great Rent Case ¹ rejected the doctrine that rent in the delta was economic rent, and decided that the rent could not be determined by competition, as it was opposed to the customs and conditions of the delta, and that a raiyat was bound to pay "fair and equitable" rent, which was defined as "that portion of the gross produce, calculated in money, to which the zamindar is entitled under the custom of the country," the portion to be arrived at by taking into account the pargana rates, the rates paid for similar lands in the neighbourhood and the rates determined by the law and usage of the country. The Rent Law Commission mentioned before considered that "fair and equitable rent was such a portion of the produce as would leave enough to the raiyat to enable him to carry on the cultivation, to live in reasonable comfort, and to participate to a reasonable extent in the progress and improving prosperity of his native land." The Commission then recommended:—"The conclusion to which we feel guided upon the whole subject of settlement of rents and enhancement is, that the safest course for the legislature is to lay down certain broad lines upon which the officers of Government shall proceed in this matter—at the same time providing certain positive checks which experience has shown to be necessary in order to prevent sudden and great changes in the respective conditions of landlords and tenants in Bengal." This is accomplished by the Act of 1885.

The Act laid down the principle of fair and equitable rent as the standard for the raiyats' rent but one uniform

¹ Cf. Rampini, Bengal Tenancy Act, 4th Edition, Introduction.

standard could not be established in the delta, as the pitch of rent differed in different parts, and as it was thought undesirable to level the prevailing inequalities to one uniform standard. The prevailing rates were, therefore, presumed to be fair and equitable and enhancement or reduction was provided according to certain principles. Those landlords, who had remained content in the past with comparatively low rates, were allowed to raise them to the level of those prevailing for neighbouring lands of a similar description and possessing similar advantages, subject to such limits as the Courts might think equitable, and thus to place themselves on the same level as their more exacting brothers.¹ This is then the first ground, on which the rent paid by an occupancy raiyat can be enhanced. Secondly, if the productive powers of his holding increase by the agency or at the expense of the landlord, the latter is allowed by the Act to enhance the rent up to the full value of the increase. But if the increase is due to the agency or at the expense of the raiyat himself, he enjoys the full benefit of it, and the landlord cannot enhance the rent.² These provisions are meant to encourage both the landlord and the raiyat to employ capital in the improvement of the land, by securing the whole profit from this application of capital to him, who applies it. Thirdly, when the increase in the productive powers of a holding is the result purely of the alluvial action of a river,³ the landlord is allowed to raise the rent by half the value of the increase, the other half being retained by the raiyat.⁴

Finally, the Act allows an enhancement of rent on the ground of a rise in the prices of agricultural produce. This rise has been caused, firstly by an increase in the demand for food grains on account of a rapid increase in

¹ Sec. 30 a.

² Sec. 30 c.

³ It has been explained before that on account of the silt-depositing action of the big rivers of the delta, a sandy plot of land may become very fertile in a short time.

⁴ Sec. 30 d.

population, secondly, by an increase in the demand for food-stuffs and raw materials on the part of other countries, as evidenced by the expansion of India's export trade, and thirdly by a continual fall in the purchasing power of the rupee on account of a fall in the price of silver. The last cause had reduced the purchasing power of the money rent paid to the landlords, while the first two causes had produced an unearned increment for the appropriation of which a long struggle had been going on between the landlords and the raiyats. A large mass of the litigation between them during this period was actuated by these motives. The Act of 1885 lays down that if an enhancement of rent is claimed on the ground of a rise in prices, the court shall compare the average prices during the decade immediately preceding the institution of the suit with the average prices during such other decade as may appear equitable and practicable to take for comparison, and that the enhanced rent shall bear to the previous rent the same proportion as the average prices during the last decade bear to the average prices during the previous decade taken for purposes of comparison, provided that in calculating this proportion, the average prices during the later period shall be reduced by one-third of their excess over the average prices during the earlier period, in order to cover the probable increase in the cost of production.¹ It is important to note that in spite of all these four ways in which rent can be enhanced, the Act lays down that the court shall not in any case decree any enhancement, which may be under the prevailing circumstances unfair or inequitable.²

With regard to the actual working of these provisions, Mr. Guha asserts, "So far as my experience in Bengal settlements goes, the rise of prices is practically the only ground on which decrees for enhancement can be obtained. The prevailing rate for land of similar description with

¹ Sec. 32 A & B.

² Sec. 35.

similar advantages in the vicinity is difficult to prove, as also an increase in the productive powers of the land in respect of which the enhancement is sought.”¹ This, however, does not prevent the landlord from taking advantage of the ignorance of the raiyat by enhancing the rent or exacting abwabs without the sanction of any court.

The Act provides for the reduction of an occupancy raiyat's rent on two grounds, *viz.* firstly, that the soil of the holding has, without the fault of the raiyat, permanently deteriorated on account of a deposit of sand or other specific cause, sudden or gradual, and secondly, that there has been a fall, not due to a temporary cause, in the average local prices of staple foodcrops during the currency of the rent in question.² The Act prevents continuous enhancements by laying down that a raiyat's rent, once enhanced, cannot be enhanced again, for fifteen years.³

The Act affords effective protection to both raiyats holding at fixed rates and occupancy raiyats against arbitrary eviction by providing that they cannot be ejected except on the ground of the breach of a condition consistent with the provisions of the Act.⁴ They cannot be ejected in execution of decrees for arrears of rent. The Act requires the decree-holders to bring the tenancies to sale, and the tenants are entitled to surplus sale-proceeds.⁵ It prevents incessant harassment of raiyats, by providing that an interval of not less than three months must intervene between the institution of successive suits for arrears of rent.⁶ It weakens the power of the landlords to employ the process of distraint merely for the purpose of oppressing the raiyats, but the process remains effective for the recovery of arrears.⁷

The non-occupancy raiyat, who possesses no rights of occupancy, but who forms a large class, is liable to pay such

¹ Land Systems of Bengal and Bihar, p. 162.

² Sec. 38 a & b.

³ Sec. 37.

⁴ Sec. 18 b.

⁵ Sec. 65.

⁶ Sec. 147.

⁷ Chapter XII.

rent as may be agreed on between him and the landlord at the time of his admission, and the rent cannot be enhanced except by registered agreement or by agreement under Section 46.¹ He is liable to ejectment on the ground of failure to pay arrears of rent, misuse of land or breach of contract, and also on the expiry of the term of a registered lease or of the term for which he is entitled to hold land at a fair and equitable rent determined under Section 46.² This section lays down that, if a raiyat refuses to execute an agreement for enhancement of rent tendered to him by his landlord, and if the latter thereupon institutes a suit to eject him, the court shall determine what rent is fair and equitable for the holding, having regard to the rents paid for lands of a similar description, and with similar advantages in the same village, and that if the raiyat agrees to pay the rent so determined, he shall be entitled to remain in occupation of his holding at that rate for five years, but that, on the expiration of that period, he shall be liable to ejectment under the conditions mentioned above. This right of occupation for five years cannot be cancelled on a sale for arrears of rent; but beyond this, the Act gives no protection to this class of raiyats against the operation of the Revenue Sale Law.

With regard to the under-raiyat, the Act prescribes that he cannot be made to pay rent more than half as much again as the rent which the lessor himself has to pay, if the lease is registered, and more than quarter as much again in other cases; and that he shall not be liable to be ejected except on the expiration of a term of written lease, and when holding otherwise, except at the end of the agricultural year in which a notice to quit is served upon him by his lessor.

It thus becomes clear that the rent legislation of Bengal starts from a basis of custom, and although allowing the

¹ Secs. 42 & 43.

² Sec. 44 a, b, c & d.

legitimate influence of competition, endeavours to restrict it within reasonable limits. Its aim is not to reduce the advantages naturally accruing to the landlords, but to maintain the rights already bestowed upon the raiyats by custom. Thus custom is still, to a large extent, the basis of rent in the delta.¹

Further, in order that the raiyats may not abandon their rights to the landlords from ignorance, poverty or fear of oppression, the Act prohibits them from contracting themselves out of the rights conferred upon them by law, pronounces certain conditions in leases as null and void, and lays down that nothing in any contract shall bar the acquisition of occupancy rights by the raiyats or take away or limit their right to make improvements, to surrender their holdings, to transfer and bequeath them in accordance with local usage, to sublet them or to apply for a reduction or commutation of rent in the manner authorised by law.

Finally, an important feature of the Act is the power it gives Government to direct the preparation of a survey and record-of-rights of all the landed interests in any local area, in order to enable the landlords and the raiyats to understand their respective positions better, to protect the latter from arbitrary eviction, excessive enhancement and illegal exactions and to avoid disputes between them and the landlords.²

The Act has been later amended in several respects, but the principles underlying it remain unaltered. The first important amendment was made by Act III of 1898, which recast Chapter X and divided it into two separate portions, the first dealing with the preparation of a record-of-rights in areas where the land revenue is being settled, and providing for a settlement of fair and equitable rents, which includes an enhancement or reduction of prevailing rents according

¹ Cf. Imperial Gazetteer of India; The Indian Empire, Vol. III, p. 474.

² Chapter X. This record-of-rights has been prepared for all the districts in the delta, except Pabna and Bogra, where it is not yet completed.

to law, for raiyats of every class, as an integral part of the operations; and the second, dealing with the preparation of a record-of-rights, in areas, where the land revenue is not being settled, and empowering the settlement officer to settle fair and equitable rents, only where such a settlement is demanded by the landlord or tenant, and in other cases confining him to a record of the rent payable at the time of the preparation of the record-of-rights.

The last amending Act is Act I of 1907, which gives a greater authority to the record-of-rights, by laying down that every entry in it shall be presumed by the courts to be correct, until the contrary is proved. It empowers Government to allow selected landlords in areas where a record of rights has been prepared, to recover arrears of rent by the summary procedure prescribed by the Public Demands Recovery Act of 1895, which differs from the ordinary procedure mainly in this, that under the former the landlords obtain a decree immediately and not at the end of the hearing. On the other hand, the Act empowers revenue officers to reduce rents, which may have been illegally increased above those put down as legally payable in a record of rights. Moreover, the Act prescribes that the courts shall not recognise any agreements or compromises between landlords and tenants, the terms of which, if entered into a contract, cannot be valid under the Tenancy Law. This provision put an end to the common practice of the landlords, who used to secure illegal enhancements of rent by filing a suit for enhancement and then making a so-called compromise, which gave them an increase above that allowed by law.

Thus, the delta has now a variety of landed interests. There are first of all the zamindari estates, whose rights and incidents have been explained before. But the lakhiraj estates, which have to pay no revenue to Government, although few in number, possess the highest aggregate of rights, because, although their other incidents are the same

as those of a zamindari estate, they are not liable to sale for arrears of revenue, there being no revenue to be paid. However, on account of this non-liability to sale, there is no statutory method of cancelling encumbrances once created in such estates. These revenue-free grants were originally made for the maintenance of learned or pious men, or of religious or charitable institutions, or of military officers of the state.¹ The grants made by the sovereign were called Badshahi and those made by zamindars or revenue collectors were called non-Badshahi. The Regulation 37 of 1793 recognised all such grants, that were made before 12th August 1765, provided that the grantees had obtained possession before this date and retained it. Grants made after this date, but before 1st December 1790, were recognised in some cases, and the grants posterior to the latter date were disallowed. The grants declared to be valid are all hereditary and transferable by gift, sale or otherwise.

It has been explained above that the Act of 1885 divides the holders of interests subordinate to estates (whether zamindari or lakhiraj) into (1) tenure-holders, including under-tenure-holders, (2) raiyats and (3) under-raiyats. A variety of tenures possessing different local names exists in the delta, but they may be grouped into four classes according to their origin, *viz.*, (1) tenures created before the Permanent Settlement, (2) permanent tenures created after the Permanent Settlement, (3) Patni-Taluks, (4) temporary tenures. The first class of tenures is generally called shikimi or dependent taluks. A number of tenures existed prior to the rise of zamindaris. At the time of the Permanent Settlement many of them were separated from the zamindaris to which they had been subordinate, and were formed into independent taluks paying revenue direct to Government, while the rest have continued to be subordinate to the zamindaris. But the

¹ Cf. Phillips, *The Law relating to the Land Tenures of Lower Bengal*, pp. 458-60.

rent cannot be increased, except upon the proof of a special customary right to do so, and of its exercise after the Permanent Settlement. Most of the second class of tenures were created by zamindars for the purpose of protecting their estates from the fate which overtook many of the estates, which had fallen into arrears of revenue after the Permanent Settlement. If they are held immediately under the proprietors, they can be protected against cancellation, in the event of a sale of the estates for arrears, by registration. Patni tenures are much less common in the delta, than in West Bengal. The example set at the Settlement by Government, which abandoned its proprietary rights in the land and contented itself with a permanent charge on the land, thenceforward freeing itself from the labour and risks of direct management, was followed by the zamindars, who disposed of their estates by creating permanent Patni tenures with rents fixed in perpetuity. This practice has continued, and the zamindars have secured far better terms for themselves than the Government could do in 1793, especially because, at the time of granting these tenures, they have obtained heavy premiums to make up for the future loss involved in fixing the rent in perpetuity. Moreover, the law has given to the zamindars almost the same means of recovering arrears of rent from their patnidars, as those by which the Government demands are enforced against themselves. In some estates the process has been developed further, and the Patnidars have in many cases leased their lands permanently to Darpatnidars, who in their turn have done the same to Sepatnidars. All these tenures are heritable and transferable by sale or otherwise, and can be sub-let freely. The incidents and rights of the lowest grade of interest in land, *i.e.*, the interest of the cultivating raiyat or under-raiyat have been already explained.

CHAPTER V.

THE LAND AND REVENUE SYSTEMS OF THE DELTA : PRESENT PROBLEMS.

Two very important problems arise out of the examination that was made in the previous chapter of the historical development of the land and revenue systems of the delta. The first is whether the grant of proprietary rights to the zemindars was necessary in 1793, whether it is in the interests of the community now, and whether, if it is not, it can be altered in any way; and the second is whether the permanent settlement of the land revenue to be paid by the zemindars could not be avoided in 1793, whether this settlement has been conducive to the interests of the community, and whether, if it is not, the revenue paid by the zemindars can be reassessed. Most writers have made the mistake of assuming that the grant of proprietary rights to the zemindars and settling the revenue with them and the permanent settlement of the revenue were inseparable. But the two problems are quite different because it was quite possible to grant the rights to them and to settle the revenue with them without fixing it in perpetuity. Before considering these problems, it is necessary at the outset to dispose of the assertion, which is commonly made, that even if it is desirable in the interests of the community to take away or modify the proprietary rights granted to the zemindars or to reassess the land revenue paid by them, it cannot be done now or at any time in the future, because in 1793 these rights were granted and the revenue settled in perpetuity, and that all future governments in India are bound to uphold the permanent arrangements that were made by their predecessor in 1793. This argument is not

valid, because it is a political theory, which is now generally accepted, that there can be no rights superior to those of the state, and that the absolute right of any individual is inconsistent with its sovereign character. In the organisation of society, there cannot be any abstract rights, absolute principles, indefeasible rules, unalterable laws, in fact anything which is eternal or inflexible. If any such things existed, which could not be altered in the interests of the state, it would mean a denial of its undoubted rights to subordinate individual good and right to those of the state. All rights are included in the state and are subject to its sovereignty. Any assertion of the superiority of the rights of the individual over those of the state would lead to an absurd position, because it would imply the sovereignty of the individual. A recognition or grant of individual property in land does not imply any abstract, absolute or inalienable right of the individual. It does imply the reward of his labour or abstinence, but these are social and not personal, because in a complex and organised society, the labour or abstinence of an individual cannot be divorced from those of others. In such a society, wealth and property are the result of its combined labour and abstinence, and not of those of a single individual. Of all properties, land ought to be held by its occupiers as a trust for the good of the state, and individual or personal property in land must be condemned, if it fails to promote that good and to develop in its occupiers a sense of responsibility. It may be desirable for the good of the state to allow individuals to hold land, but if that good requires it, it is perfectly justifiable for the state to make use of its sovereign power to take away or modify individual ownership of land, after granting compensation to them. Thus in 1793 the state, under certain circumstances, and with certain political and social objects, exercised its sovereign authority to confer property in land on a certain class, subject to the payment of certain fixed charges for the good of the whole community. However,

circumstances have completely changed since 1793, and if the good of the community demands any alterations in these proprietary rights, the state, in the exercise of its sovereign powers, has an undoubted right to do so after giving compensation.¹

There can be little doubt that the grant of proprietary rights to the zemindars was justified under the circumstances prevailing towards the end of the 18th century. In the first place, the Company was engaged in costly wars, had run into heavy debts, and on account of the instability of land revenue, which was the only important source of public revenue, found it extremely difficult to meet its expenses. It was therefore regarded as an object of paramount importance to give security and stability to the land revenue. The zemindars, who had been collecting the revenue for nearly a century, were the only well-established revenue machinery. Most of them were solvent at that time, and were thought to be capable of paying the revenue regularly, and no other revenue agency could be devised. All former endeavours to get rid of the zemindars, notably those made during the reign of Akbar and the governorship of Jaffer Khan and by the Company in 1772, had failed completely. No village communities or coparcenary cultivating bodies could have undertaken to pay the land revenue regularly. Moreover, a settlement of the revenue direct with the cultivators was quite impossible at that time because the numerical strength of the revenue staff was altogether inadequate to deal with the thousands of small holdings.² Secondly, the Company's Government regarded it as prudent, from the political point of view, to attach to itself such an influential body of persons as the zemindars, by granting them proprietary rights, by giving them all facilities for exercising them fully, by impressing upon them the fact that they received from the British

¹ Cf. S. C. Ray, *Permanent Settlement in Bengal*, pp. 27-9.

² Cf. Baden Powell, *Land Systems of British India*, p. 402.

Government rights, which had never been granted to them before, and by making them realise that their best interests required the continuance of that government. The Government hoped to secure their active help in pacifying the delta, which was in a very disturbed state at that time, in adjusting the relations between the rulers and the people, and in maintaining tranquillity after order had been restored. Thirdly, it was hoped that the grant of proprietary rights, coupled with a fixed revenue demand, would encourage the zemindars to extend cultivation, of which there was great need, as a large part of the delta was then lying waste.

The political object of the settlement with the zemindars has been fully achieved, as they have always been the most loyal element in the population of the delta. Seton-Karr says that in the dark days of the Mutiny, "the sepoys took to the villages and the jungles, and then they literally melted away before the impassive demeanour, the want of sympathy and the silent loyalty of the zemindars."¹ During the later disturbances and disorders also, they have stood on the side of law and order as established by the British Government. The financial object, however, has been only partially realised. It has been seen before how, for several years after the settlement, many of the zemindars fell into arrears of revenue, largely owing to their incapacity for prudent management of their estates according to business principles, and how the estates had to be auctioned. It is true that later the land revenue of the delta became more stable than that of the other parts, and that difficulties of collection were fewer, but this has been due to the greater fertility of the soil, the less dependence upon the vagaries of the monsoon, and the lightness of the land revenue assessment, and under these conditions, the revenue would probably have been equally stable even if the settlement had been made direct with the raiyats instead of with the zemindars. The economic object of

¹ Life of Lord Cornwallis, p. 76.

the grant of proprietary rights to the zemindars has also been only partially fulfilled. The area under cultivation has, no doubt, increased substantially since 1793, but as Shore pointed out at that time, the increase had commenced two decades before the grant of these rights, and this and the subsequent extension of cultivation has been far more the result of the rapid growth of population, which resulted from the establishment of peace and order in the country, and which increased the pressure on the soil, than of any conscious efforts on the part of the zemindars resulting from the acquisition of proprietary rights.

In these matters the settlement with the zemindars has not been, at any rate, productive of any harm. But the same cannot be said of their relations to the vast body of raiyats. It was a grave mistake to grant proprietary rights to the former without safeguarding the latter's important interests in the land. Instead of defining and adjusting them, the Government merely reserved the right to interfere on behalf of the raiyats, and the right was not exercised at all for 66 years, although it became quite clear in a short time, that Lord Cornwallis' hopes, that the zemindars would of themselves and in their own interests adjust their relations with the raiyats to the satisfaction of both parties, could not be realised at all. Sir Edward Colebrooke, after more than forty years' experience of administration in the country, wrote thus:—"The errors were two-fold; first in the sacrifice of what may be denominated the yeomanry by merging all village rights, whether of property or occupancy, in the all-devouring recognition of the zemindar's permanent property in the soil; and, secondly, in the sacrifice of the peasantry by one sweeping enactment, which left the zemindar to make his settlement with them on such terms as he might choose to require."¹ The history of these sixty-six years is largely a gloomy record of embittered relations and continuous litigation between the

¹ Revenue Selections, p. 167.

zemindars and the raiyats, of oppression on the one side, of disturbances and riots resulting from exasperation, on the other. Many of the old and original zemindar families, which had been bound to some extent to the raiyats by ties of sentiment and sympathy created by age, and which therefore had not been very extravagant in their demands, disappeared in a few years after 1793 on account of the operation of the revenue sale laws, and their place was taken by new zemindars, who obtained possession of the estates by purchase, and whose only aim was to secure as large a return as possible on the money spent in the purchase. It has been mentioned before that by 1859 the rent roll of the land-lords increased to five times what it was in 1793. The Government of India in their resolution of 16th January, 1902 pointed out, "It is precisely because.....so far from being generously treated by the zemindars, the Bengal cultivator was rack-rented, impoverished and oppressed, that the Government of India felt compelled to intervene on his behalf, and by the series of legislative measures that commenced with the Bengal Tenancy Act of 1859 and culminated in the Act of 1885, to place him in the position of greater security which he now enjoys.....They know that the evils of absenteeism, of management of estates by unsympathetic agents, of unhappy relations between landlord and tenants and of the multiplication of tenureholders or middlemen between the zemindar and cultivator in many and various degrees are at least as marked and as much on the increase there (in Bengal) as elsewhere; and they cannot conscientiously endorse the proposition that, in the interests of the cultivator, that system of agrarian tenure should be held up as a public model,.....which was found to place the tenant so unreservedly at the mercy of the landlord, that the state has been compelled to employ for his protection a more stringent measure of legislation than has been found necessary in temporarily settled areas." ¹

¹ Land Revenue Policy of the Indian Government, pp. 6-7.

It is true that the landlord and tenant system has been very successful in England. The reason for this, however, is that the landlords and tenants in this country have been virtually partners, and that traditions of friendliness and fair-minded dealings between them have existed for a long time. The landlords have not been merely rent-receivers, but have equipped the farms with most of the permanent capital necessary for their efficient working, have taken a real interest in the work of the farmers, have aided them whenever they have contemplated new enterprises or have been in difficulties, and have always renewed their leases on equitable terms so long as their husbandry has been good. The farmers, on their part, have been persons of some means, have leased large farms, and have cultivated them carefully and systematically. But these conditions do not exist anywhere else, and it is generally recognised that, as a rule, the most wholesome agricultural conditions exist, not under the landlord and tenant system, but under the system of a wide diffusion of the ownership of land and a predominance of cultivation by the owners, provided that the holdings are not so small as to become uneconomic.¹

The cultivators form by far the vast majority of the entire population of the delta, and there can be no doubt that their interests must be regarded as paramount. Moreover, conditions now are entirely different from those prevailing in 1793, because the political object, for which proprietary rights were granted to the zemindars, has been fully realized, and because no substantial assistance has been received from them in achieving the other objects. Peace and order have been so firmly established, and the position of Government is so strong, that it can quickly stamp out any sporadic disturbances, that may take place, without the assistance of the zemindars. Again, as indicated above, the land revenue payment would not become less regular, and the extension

¹ Cf. Taussing, *Principles of Economics*, 1915 edition, Vol. II, pp. 70-2.

of the cultivated area would not be checked, even if the settlement were to be made now with the raiyats. The difficulties in the way of making such a settlement have mostly disappeared, because the revenue staff, in numerical strength, ability and experience, is now far superior to that existing in 1793. Moreover, it has been explained before that, if the interests of the community require it, the state has an indisputable right to make such a settlement now, after compensating the landlords. Further, from what has been explained above with regard to the relations between the landlords and the raiyats and the necessity of tenancy legislation, it seems that a settlement with the raiyats would be in the interests of the community as a whole. If Government had now a clearer slate to write upon, measures in this direction would probably have been undertaken. But as a result of the growth of 130 years, the landed interests superior to those of the cultivators are now so numerous, so varied, so firmly rooted, and occupy such a prominent position in the social structure, that their expropriation would cause a veritable social revolution and disorganization, the effects of which are bound to be felt far and wide throughout the whole community. Moreover, it would be almost an impossible task to determine the compensation to be paid, in each case, to all of these numerous and varied interests, in accordance with certain equitable rules and regulations, and even if this were to be accomplished, the total amount would be so large that, even supposing it were to be paid in instalments or in the form of annuities, the existing resources of Government would not enable it to shoulder such a huge liability. Further, the power of the landlords to oppress the raiyats has been substantially curtailed by the legislation explained before, and if the position of the raiyats is further strengthened by measures to be indicated later, and if the spread of literacy makes them realise better their rights as against the landlords, the

retention of all the superior landed interests would not be productive of much harm to the raiyats.

Furthermore, it may be pointed out that, although in the past the landlord class as a whole has done little for the improvement of agriculture, if it can be induced to take an enlightened view of its responsibilities and if it is educated to exercise its true function, *viz.*, the direction and improvement of the agriculture of the raiyats, and to undertake the development of its estates, it will become a powerful influence for promoting the welfare of the population of the delta. It will be seen later, that the pressure of population on the soil is very heavy, that it is increasing, and that therefore the general standard of living, which is low, is in danger of being lowered further. A substantial improvement in the standard of living must be the goal of economic policy in the delta, and this cannot be achieved without a large increase in its wealth, which in spite of the development of industries in the delta, is bound to remain predominantly agricultural. It is difficult to conceive of a time in the future, when the industrial development will be so great, that the delta will be able to purchase the larger part of its requirements in the matter of foodstuffs and raw materials from other parts of India or from other countries. The improvement of agriculture is therefore a vital necessity, and the landlord class is capable of leading a movement in this direction, if only it strives for it. If it recognizes its responsibilities in this matter, it will become a useful part of the social organization of the delta.

Finally, it is doubtful whether a landlord class can be wholly prevented from coming into existence in such a very fertile tract as the delta, which has a large number of cultivators with a low standard of living, unless special measures are resorted to for the purpose, because these economic conditions seem to favour the creation of such a class. In comparatively barren tracts, such as the hilly parts of

Central India and the rocky valleys at the foot of the Himalayas, it is difficult for the landlord class to come into existence, because the produce of even fairly large holdings varying from 10 to 15 acres is barely sufficient to enable the cultivators to live and to pay a very low land revenue, and because no surplus is available for the maintenance of a landlord class. This is especially true when the cultivated land is scattered among uncultivable wastes, because then no landlord can find the task of managing his scattered estate and collecting very low rents, personally or through agents, paying enough. But in very fertile parts, the landlord class may gradually emerge, although the proprietary rights are at first granted to the cultivators at a low revenue demand. The produce of the soil being capable of a considerable increase owing to its fertility, a few ambitious and enterprising cultivators save a little capital, and bring some waste land under cultivation, or cultivate some land belonging to others under some system of sharing with them, or even purchase it outright. In these ways they can obtain so much land in the course of time that they can rent part of it, and live partly on the rent and partly by the cultivation of the remaining land. Some of them, not content with this, continue to save and obtain more land until at last they are able to live solely on the rent obtained by letting out all their land without cultivating any part of it themselves. Their sons trained in business habits and hard work may follow in the footsteps of their fathers and increase the family property still further. But the third and succeeding generations brought up in luxury do not trouble to save and to extend their estates, and a full-fledged and idle landlord class thus comes into existence. The class may also arise in another way. The soil being fertile, the land already in the possession of cultivators can be made to yield more by the application of more labour and capital to it, and the cultivators are aware

of this. The professional money-lenders take advantage of this fact, and lend them money at a high rate of interest on the mortgage of their holdings. Many of these loans cannot be repaid and then the money-lenders foreclose on the mortgages, the land passes into their hands and they become landlords. If the law prevents the acquisition of such proprietorship on the part of the professional money-lenders, their place is taken by some individuals belonging to the agricultural class, and the ultimate result is the same. These tendencies are noticeable in those parts of the raiyatwari tracts and canal colonies in India, in which the land is sufficiently fertile. Moreover, it is doubtful whether the law can destroy these tendencies completely. Thus, even if the law were to give no support to the recovery of rent, a man can let his lands to trustworthy cultivators, who, moreover, would find the regular payment of rent to be in their own interests, in order to be allowed to remain in occupation of the land. Again, the law would find it difficult to prevent the cultivation of such lands by cultivators, who are nominally the partners, but really the tenants of the proprietor.¹ It is, however, necessary to emphasise that undue importance should not be given to these tendencies. In the first place their operation is slow and limited in extent. And secondly, it can be further retarded and checked to a considerable extent, although not completely, if this is necessary in the interests of the community, by abolishing landlords' estates periodically, by forcing sales of proprietary rights to tenants, by state acquisition and by other measures. Hence, if the abolition of the present landlord and tenant system in the delta is considered desirable in the interests of the community on other grounds, the decision cannot be upset by the existence of the tendencies mentioned above. They are at best a single factor in favour of the retention of the present system.

¹ Cf. Jevons, *Economics of Tenancy Law and Estate Management*, pp. 14-15.

It has been mentioned above that the grant of proprietary rights to the zemindars and the settlement of land revenue with them were justifiable under the circumstances existing in 1793. But the same cannot be said of fixing the revenue in perpetuity. In the first place, this measure was entirely unnecessary, because the fallacies of Cornwallis' argument, that it was necessary for the purpose of making the zemindars feel secure in their title to their estates and stimulating them to undertake the extension of cultivation, have been explained before. Secondly, it was most undesirable to carry it out without previously obtaining a fairly accurate knowledge of the actual and potential capacities of the whole land by means of a complete survey of the lands, of their value and produce, of the state and extent of cultivation, of the possibilities of reclaiming wastes, of the nature of the prevailing tenures, and of the rights and interests of the state and the raiyats. Such a survey and settlement were not possible at that time on account of the inadequacy and inexperience of the revenue staff and of the danger of rousing political discontent. Therefore, the land revenue was fixed on the basis of the actual payments that had been made before, and without any reference to the above important considerations. In fact, the unit of the settlement was the estate of the zemindar, not the holding of the raiyat, and the assessment was based upon the amount of revenue which the estate as a whole had paid in the past, and not upon the amount which each holding in the estate was in a position to pay. Thirdly, the government of Lord Cornwallis itself knew that the area of waste lands, which were either included in the settlement with the zemindars or lying on the borders of their estates without a definition of their boundaries, was between $\frac{1}{3}$ and $\frac{1}{4}$ of the total area, that the reclamation and cultivation of these waste lands were proceeding at a fairly rapid pace, as population, which was then comparatively sparse, was increasing, and that fixing the revenue demand

for ever, without waiting to make a due allowance for the operation of this most important factor, would yield a large gain to the landlords, which they would do nothing to earn, and which they would obtain at the expense of the community as a whole. As to the hopes of the Government that the community would secure a sufficient return for this sacrifice, in the form of exertions on the part of the zemindars for the improvement of agriculture and of the conditions of the raiyats, there was nothing in the past history of the delta to justify or even to encourage these hopes, and as a matter of fact, as will be seen presently, they have not been realised at all.

From the point of view of the revenue of the state it is unsound to fix the land revenue permanently as long as cultivation can be extended further, and as long as the land and its produce continue to increase in value on account of any causes, which are not the direct result of the holder's own efforts and expenditure. In 1867 Her Majesty's Government laid down that the land revenue should not be fixed permanently for any estate, in which the actually cultivated area was less than 80 per cent. of the culturable area, or which was likely to obtain the advantages of canal irrigation within the next twenty years, and which, consequently, was likely to increase its assets substantially. Two principles underlay this rule, *viz.*, firstly, that the state had no right to any share in the increase in the profits of land, which might result from the application of labour and capital of the holder; and secondly, that the state was entitled to a share in the increase in the profits of land, which would, within a fairly definite period, result from the application of the skill and capital not of the holder, but of the state itself.

The rule, however, was deficient in two respects. In the first place, there was no reason why the right of the state to share in the increased profits of land should have been limited to profits resulting from canal irrigation. The state is

equally entitled to share in the profits that may result from the improvement of means of communication, the construction of public works, etc., in fact, it is entitled to share in all the profits that may accrue from any cause that may be independent of the action of the holder of the land, whether they accrue from the opening of new and profitable markets within and outside the country, or from an increase of population, or from a fall in the purchasing power of money. Secondly, the land revenue cannot be fixed permanently in a tract, in which the rental has not been fully developed, *i.e.*, in which the standard of the prevailing rent is inadequate in relation to the actual capacities of the land, because the land revenue demand is determined upon as a certain percentage of the rental, it being 50 per cent. of the rental in the case of the Government of India. But the creation of a fully developed rental, for the purpose of securing a proper basis for the permanent settlement of the revenue, would be an unsound land policy, because, for every rupee added to the revenue to make up the proper amount permanently fixed, the cultivators would have to pay two rupees to the landlords, the revenue demand representing 50 per cent. of the rental assets. This would involve the abolition of restrictions placed by law and custom on the landlords' power of increasing rent and of the raiyat's rights of occupancy, which would lead to the exaction of rack-rents. It is thus seen that the difficulties in the way of permanently fixing the revenue without any undue sacrifice of the interests of the community are so great as to make this settlement impracticable. Her Majesty's Government arrived at the same conclusion in 1883 after a protracted discussion extending over many years.

The sacrifice of revenue involved in the perpetual fixing of the demand has been very large. Figures are available for Bengal, Bihar and Orissa as a whole and not separately for the delta, but they suffice to give a clear idea of the loss involved to the delta. In 1793, the revenue assessment fixed

permanently amounted to Rs. 286 lakhs. It represented 90 per cent. of the gross rental, and Sir John Shore calculated that the Government, the landlord class and the cultivators obtained 45, 15, and 40 per cent. of the gross produce of the land. Although the assessment was undoubtedly heavy at that time, it was not so heavy as may appear at first sight; for firstly, the zemindars had not to pay any revenue for their nankar or nijjote lands; secondly, they were permitted to retain the whole of the Sayer imposts and the yield from all invalid grants under 100 bighas, which they were allowed to resume; and thirdly, assets were fraudulently concealed by the zemindars to a considerable extent, and so escaped assessment. Moreover, as population increased, as waste lands were reclaimed, as cultivation extended, as the value of agricultural produce increased on account of the improvement in the means of communication and the opening of new and profitable markets, and as the purchasing power of money fell, the rent roll of the zemindars went on increasing until it rose in the permanently settled estates from Rs. 318 lakhs in 1791 to Rs. 1,472 lakhs in 1904.¹ The land revenue, however, rose during this period from Rs. 286 to 323 lakhs only, and even this increase was the result of the resumption and assessment of a number of estates, which at the time of the Permanent Settlement had been held revenue-free under invalid titles, and the right to resume which had been retained by Regulation I of 1793, and not of any increase in the assessment of those estates which had been already permanently settled. Thus the Government share of the rental fell from 90 to 24 per cent. Deducting 10 per cent. for the cost of collecting the rent, the net rental increased by Rs. 1,039 lakhs. Had the land been temporarily settled, the Government would have been entitled to at least 50 per cent. of this increase in accordance with the Saharanpur rule, which governs the assessment of

¹ Imperial Gazetteer, Bengal, Vol. I, p. 123.

landlord estates in temporarily settled areas. Thus, the annual loss to the Government amounted to at least Rs. 519 lakhs in 1904, and it is estimated that the present loss is no less than Rs. 600 lakhs.¹ The gross income of the landlords in the meanwhile has increased by at least 36 times,—an increase which, unlike the English landlords, they have done almost nothing, in the shape of the application of their skill and capital to the land, to earn.

What has the community obtained as a recompense for this large sacrifice? The makers of the Permanent Settlement hoped that “the proprietors of land, sensible of the benefits conferred upon them by the public assessment being fixed for ever, will exert themselves in the cultivation of their land, under the certainty that they will enjoy exclusively the fruits of their own good management and industry.”² These hopes have not been realised. The landlords, as a whole, with a few exceptions here and there, have spent little capital on the improvement of the land either from motives of gain or from public spirit. Nor have they taken any trouble to direct and promote agriculture, and to improve the conditions of their tenants. They have failed to realise the duties and responsibilities of the position granted to them in 1793. By the process of farming out their estates, they have mostly become mere annuitants, living in towns as absentee landlords away from their estates, and leaving the management of the estates in the hands of ignorant, unsympathetic and rapacious agents. Testimony in support of these facts, on the part of independent witnesses with a long experience of the delta, is abundant. Thus, Baden Powell says, “they (landlords) did nothing for the land, and even when there was no glaring personal defect, the climate and habits of the country unfortunately suggested that the proprietor should save himself the trouble by farming out his estate to any one

¹ Cf. Sir B. Fuller, *Empire of India*, p. 336.

² Article VI of the Proclamation of 1793.

who would give him the largest profit over and above his revenue payment. And as the proprietor's farmer in time grew rich...so he too farmed his interest to others, till farm within farm became the order of the day, each resembling a screw upon a screw, the last coming down on the tenant with the pressure of them all."¹ Sir John Woodburn, a Lieutenant-Governor of Bengal stated in 1901, "he cannot truthfully say that he has observed among the rank and file of the zemindars a greater disposition to execute improvements on their properties or to subscribe to local needs and charities, than among the zemindars of the Upper Provinces."² Again, Mr. J. R. Reid, Secretary to the Government, North-Western Provinces (now the United Provinces) wrote in 1873, "According to theory one should find the permanently settled estates in the most flourishing condition with all manner of improvements introduced, and landlords very well-to-do and most liberal to their tenants. But in fact in riding through these villages and through the parganas generally, you would not detect anything in the appearance of the people and land,condition of the people and cattle, to make you suspect that the permanently-settled landowners enjoy a different tenure from their neighbours of similar caste and condition in temporarily settled estates. There is as much capital and industry bestowed on the land in the one set of estates as in the others."³ More evidence of a similar kind could be given, if space had permitted it.

These evils have become aggravated on account of the increasing habit of buying land purely as an investment of capital. Prosperous lawyers and merchants, with savings to invest, are generally eager to purchase zemindari estates, although they continue their occupations in the towns, and have to leave the management of the newly purchased estates

¹ Land Systems of British India, p. 407.

² Land Revenue Policy of the Indian Government, p. 58.

³ Quoted in Guha, Land Systems of Bengal and Bihar, pp. 101-2.

in the hands of agents. The estates are bought and sold purely on the basis of their earning power, which is ascertained by deducting the land revenue to be paid to the Government from the total annual collection of rent and abwabs. The price paid by the investors generally varies from 23 to 30 years' purchase of this earning power, and the investors therefore obtain an annual return of 4 per cent. and frequently a little less on their investment. Even before the war, they could have secured a somewhat better yield on their money by investing it in other ways, and since the war they can get at least five per cent. by purchasing Government securities. Their preference for land seems to be due partly to an expectation of securing a higher profit in the future, and partly to a desire of acquiring the special honour and social prestige attaching to the status of a zemindar. Such purchasers, however, almost invariably prove to be bad landlords, because they have to be absentee landlords, and being busy with their occupations, they have little time to supervise and control the work of their agents and the latter's subordinates. Moreover, very often they regard their estates solely from the commercial point of view, and endeavour to exact from them that increase in profit which they had anticipated in buying them. The growth of the same habit is noticeable in other zemindari tracts also, such as the United Provinces, but there it is more recent and has reached a lower magnitude.

The Permanent Settlement has not only failed to encourage the landlords to undertake the improvement of land, the promotion of agriculture and the amelioration of the economic conditions of the raiyats, but it has also stimulated the growth of an evil, which has adversely affected a large part of the population of the delta, *viz.*, subinfeudation, *i.e.*, the existence of a number of layers of intermediary or middlemen's rights in the land between the actual cultivator of the land at the bottom and the proprietor who pays revenue to

Government, at the top.¹ Zemindars, who wished to raise money or to avoid the trouble of managing their estates, without losing their status as zemindars, farmed out their estates to others, who followed the same practice, until numerous tenures within tenures were created. The evil of subinfeudation, however, is so prominent in a part of the delta, and its economic consequences are so important that it will be examined in greater detail in a later chapter.

The influence of the Permanent Settlement has not been limited to the agriculture of the delta ; it has affected also its industrial and commercial development. The influence, however, has been far from desirable, as it has retarded this development. In the delta the position of a landlord is regarded as one of special honour and social prestige, and it is the ambition of every one, who can save, to become one day a landlord or at least a tenure-holder. Hence most of the savings of the community are diverted from investment in commerce and industry to the purchase of landed rights, the competition for which is always keen. The sellers of landed rights have generally to utilise the proceeds in repaying debts incurred for unproductive and extravagant expenditure in which they are encouraged to indulge by the high market value of their landed rights. The consequent lack of capital has almost killed all spirit of business enterprise. Moreover, these new landlords utilise all their further savings, if they happen to make any, in purchasing more landed interests, or in accumulating treasure, or in useless extravagance. In this respect, the contrast between Bengal and Bombay, both of which are more advanced in the general level of intelligence and education than the other provinces of India, is striking. The delta is not inferior to Bombay either in this level or in the production of raw materials, and yet mainly on account of the above-mentioned diversion of capital, the development

¹ Cf. Phillips, *The Law relating to the Land Tenures of Lower Bengal*, p. 366.

of commerce and industry in the delta has lagged behind the development in Bombay, and whatever development has taken place in the former, has been mostly due to foreign capital, skill and enterprise. In Bombay, on account of the absence of the Permanent Settlement, no special honour or prestige attaches to the ownership of land, and consequently the savings and attention of the community are more directed to the promotion of commerce and industry, and indigenous business enterprise is much more stimulated.

The advocates of the Permanent Settlement, the chief among whom was the late Mr. Romesh Chandra Dutt, have claimed a number of advantages for it. But they have made the mistake of attributing to it benefits which have really resulted from the operation of other and independent factors. It is true firstly that the standard of living of the cultivators in the delta is a little better than that of their brethren in the other parts of India, and secondly that it is somewhat better than that of their forefathers, who lived in the midst of the confusion and disorder that prevailed prior to, and during the early part of, the establishment of the British rule; but these conditions are not the consequences of the Permanent Settlement. The first, as is seen in other chapters of this book, is the result of the exceptional fertility of the soil, which is annually enriched by deposits of silt carried down by big rivers, of natural irrigation in the shape of flood water, which enables the cultivators to raise bumper crops with little labour, of the excellent means of transport, supplied, except during the dry season, by its innumerable waterways, and of its practical monopoly of a very profitable trade in jute. The second condition is the result of the establishment of peace, order and security of property, of the opening of new and profitable markets in and outside India due to the improvement in the means of communication in the shape of railways, steamships, telegraphs and post offices, and of the influence of other agencies of civilisation, whose

progress, although very slow, has not come to an untimely end.¹

The advocates of the Permanent Settlement maintain that it has established a class of landlords who, by the moderation of their demands, have left to the raiyats a large proportion of the produce, and have thus promoted their prosperity and strengthened their power to withstand famines by enabling them to make savings during good years, which serve the purpose of a famine insurance fund. History gives no support at all to this view. On the contrary, it has been seen before that the Regulation of 1793 and subsequent regulations did not prevent the zemindars from raising the rent to a high pitch, that they made full use of this power, that their relations to the raiyats became very embittered, and that at last the Government was forced to safeguard the rights of the latter, and to reduce the pressure of the exactions of the former by a series of agrarian statutes. The zemindars deserve no credit for the prevailing moderation of rent, because it has been forced upon them by these statutes. To confound this agrarian legislation with the Permanent Settlement, and to attribute even partly to the latter, advantages, which it had clearly failed to yield, and which would never have been obtained by the raiyats except for the former, is a strange misinterpretation of history. And as to the comparative freedom of the delta from suffering that results from periodic famines, it has had nothing to do with the policy of the zemindars. It has been entirely the result of the exceptional advantages enjoyed by the delta in the shape of the exceptional fertility of soil, the abundance and regularity of flood water, the excellent waterways and the profitable trade in jute, which have been already referred to.

Secondly, it is claimed that the zemindars have promoted agricultural enterprise and accumulation of capital. Facts are entirely opposed to this view also. Habitually indolent

¹ Cf. Guha, *Land Systems of Bengal and Bihar*, p. 218.

and unschooled in business habits, most of the zemindars have lacked any kind of enterprise, and their income has been spent on unproductive expenditure, and little of it has been invested in land improvements, and still less in commerce or industry. Of course there are some exceptions to these general conditions, but they are few. In any case, there can be no doubt that the zemindars of the delta, enjoying the Permanent Settlement, have shown no greater enterprise and investment than their fellows in other parts of India, upon whom this benefit has not been conferred. Again, it is maintained that the Permanent Settlement has developed in the delta an exceptional flow of public spirit and of charitable investment. "The zemindar is the only channel through which new knowledge and the comforts of civilisation can reach the cultivators. His manor is an oasis of culture amidst a dead level of ignorance and poverty."¹ It is true that there are some public-spirited and charitable landlords in the delta. But there are such landlords in other parts of India too. These qualities are the result of individual culture and enlightenment, and have nothing to do with any particular land revenue system. It cannot be said that the zemindars of the delta as a body have given proof of a greater public spirit and charitable disposition than their brethren in the United Provinces, which are temporarily settled.² Moreover, as mentioned before, the evils of absenteeism, of management of estates by unsympathetic agents and of unhappy relations between the landlords and tenants, are no less in the delta than in the other parts of India. Again, Mr. Dutt mentions the loyalty of the Bengal zemindars as a consequence of the Permanent Settlement. Their loyalty is undoubted, but it cannot be said, that the zemindars of the other parts have proved themselves less loyal. Thus the praiseworthy

¹ J. Sarkar, *Economics of British India*, p. 128.

² Cf. Sir John Woodburn's opinion, *Land Revenue Policy of the Indian Government*, p. 58.

characteristics displayed by some of the zemindars in the delta are the products of other circumstances and not of the Permanent Settlement, as they have been equally displayed by the landlords in the other parts, which are temporarily settled,

Further, it is asserted that "The Permanent Settlement, co-operating with the law of equal inheritance of all the sons, has created a large middle class with a secure income, which is the cause of the social, literary and educational advancement of Bengal. The political importance of such a middle class cannot be exaggerated; without it, representative government cannot be successfully conducted...every Bengal "squireen" has just enough to educate his sons with, but not enough to induce them to lead an idle life. They, therefore, display something of the proverbial keenness and enterprise of the "younger sons" of the English aristocracy.¹ It is true that the Permanent Settlement, by stimulating the growth of subinfeudation, has helped the creation of a comparatively large, educated and politically minded middle class. But the existence of a similar large class, possessing a similar equipment, in the Bombay Presidency shows that the delta could have secured the existence of such a class without the Permanent Settlement. Moreover, from the point of view of the community, as a whole, this gain is more than counterbalanced by the economic evils, which, as explained later, have resulted from the growth of subinfeudation. Further, it is incorrect to say that this middle class, as a whole, has displayed considerable keenness and enterprise in promoting the productive capacity of the community, because any one, who possesses an intimate and first-hand knowledge of the social and economic conditions of the delta, knows that there is a large number among the Bhadralog class, who somehow manage to live upon the profit of their tenures, spending their whole time in

¹ J. Sarkar, *Economics of British India*, pp. 129-30. See also R. C. Dutt, *India in the Victorian Age*, p. 461.

idleness and performing no useful work for the community, and who do not like to take up any regular work, unless compelled to do so by want, although their standard of living, in many cases, may be in danger of being lowered on account of the gradual reduction of their profit from the tenures, brought about by subdivision.

Finally, it is held that the Permanent Settlement avoids all the expenses, agricultural disorganization and harassment to the raiyats, which attend periodical settlements of land revenue in other parts of India. These objections to revisions of settlements have lost most of their force, because the process of resettlement is now much more rapid and far less costly, disturbing and vexatious than it was formerly. In Northern India, the great improvements effected in the village land records and maps, and their regular correction and maintenance up-to-date, have largely removed the necessity for detailed surveys and local enquiries by subordinate officers, which used to cause agricultural disorganization and harassment to the raiyats. Owing to this improvement and the simplification of the methods of assessment, the period of the re-settlement of a district has been reduced from about eight to less than four years. Moreover, Government has declared that the aim of its policy is "to exclude underlings from all connection either with the work of assessment or with the preliminary investigations leading up to it, and to devolve upon the settlement officer and his gazetted assistants all the negotiations with the people."¹ In the delta village land records and maps have been already prepared during the survey and settlement operations, and it only remains to provide for their punctual maintenance up-to-date by registering all the changes that may take place from time to time.

It thus becomes clear that the Permanent Settlement of the land revenue to be paid by the zemindars was both unnecessary and undesirable in 1793, that it annually causes a

¹ Land Revenue Policy of the Indian Government, p. 19.

considerable loss to the community without any compensating advantages, and that the landlords contribute much less than their fair share towards the expenses incurred by the Government on behalf of the community. They can be made to pay more in one or more of three ways, *viz.*, by increasing the land revenue demand, by making them liable to other general taxation on behalf of the Bengal or the Central Government or by subjecting them to local taxes levied for specific purposes by local self-governing bodies. The zemindars have claimed exemption from liability to pay more in any of these three forms by appealing to Article VI of the Proclamation of 1793 which stated, "The Governor-General-in-Council trusts that the proprietors of land, sensible of the benefits conferred upon them by the public assessment being fixed for ever, will exert themselves in the cultivation of their lands under the certainty that they will enjoy exclusively the fruits of their own good management and industry, and that no demand will ever be made upon them, or their heirs or successors by the present or any future Government, for an augmentation of the public assessment in consequence of the improvement of their respective estates." Whatever be the strict legal interpretation of this article, it appears that under it the zemindars cannot fairly claim exemption from other general taxes, because the context of this proclamation and of the despatches issued at that time seems to show that the authorities limited the expression 'public assessment' to the revenue payable by the landlords to Government in respect of their estates. The terms of the Proclamation, or of the Regulation into which it was enacted, fail to give any indication that the Bengal zemindars, of all the landowners in the country, are entitled to occupy a specially privileged position in a scheme of general taxation of all lands. There can be no sound reason, why they should be exempted from a general tax, for instance the income tax, while the Talukdars of Oudh may be made to pay it, in addition to a periodical increase in

the land revenue. On the contrary, those, whose contributions to the state in one direction are fixed, cannot but be regarded as more liable to pay contributions in another direction. Fixity of assessment in one branch of taxation cannot be said to carry with it a similar fixity in another branch.¹ It seems paradoxical that the state should have abandoned its right to tax property in land, which it has itself created, while retaining the right to tax all other classes of property. It becomes clear, therefore, that the zemindars cannot claim exemption from any general tax. The state has a right, not merely to disregard such claims, but also, as explained at the beginning of this chapter, to reassess the land revenue demand, should the interests of the community demand it.

With regard to the zemindars' liability to pay local taxation, it should be remembered firstly that the proceeds of a local tax are utilised for specific purposes, such as the maintenance of roads, schools, dispensaries, etc., within a local area, whereas the proceeds of a general tax are merged in the general revenues of the country, which are spent on general administration. Therefore, if it was not the intention of the authorities, who issued the Proclamation, to include general taxes, other than land revenue, in the expression 'public assessment,' much less could they have intended to include local taxes in it. Secondly, the Proclamation made the fixity of land revenue dependent on improvements to be made by the zemindars in their estates. It was not merely the zemindars who were interested in the improvement of their properties, for the purpose of increasing their income. The state also was deeply interested in their internal and external improvement, for increasing the wealth of the community as well as its own resources. So there were two alternatives. One was that the zemindars should improve their properties and should be free from taxation for this purpose. This followed from the grant of proprietary rights to them. The

¹ Cf. S. C. Ray, *The Permanent Settlement of Bengal*, p. 32.

Proclamation was intended to give them the necessary stimulus for this work by laying down that their land revenue would not be increased in consequence of improvements in their estates. But if the zemindars failed to carry out these obligations, the fulfilment of which was the main object of making them proprietors, the only other alternative was that the state should carry out the improvements with the proceeds of taxes levied on those lands. The state could never have surrendered its right to ensure that the improvements were carried out, or to tax the estates with the special object of improving them. Nor could the state have allowed that the improvements might not be made at all, or that they might be left to the sweet will of the zemindars, or that they might be carried out at its own expense, leaving the zemindars, to enjoy the unearned benefits accruing from them.¹ The local public requirements of a progressive community increase rapidly, and local taxation to meet them must increase correspondingly. To abandon it or even to limit it more than is quite necessary, would mean a stoppage of the internal progress of the community. Thus the conclusion becomes inevitable that the zemindars cannot claim exemption from local taxation. This question assumed a practical importance in 1871, when the Government of Bengal proposed to levy a cess for constructing and maintaining roads and other means of communication. It was decided to levy the cess on all lands, whether they had to pay land revenue or not. Since that time the zemindars are held liable to pay such local taxes.

It is, however, the pitch of local taxation, and not of general taxation, which requires to be raised in the immediate future. The latter is already high enough, and its proceeds ought to suffice the needs of the Provincial and Central Governments, provided that their present wasteful expenditure in several directions is cut down, and that

¹ Cf. S. C. Ray, *The Permanent Settlement in Bengal*, p. 34.

their administrations are conducted economically. But the level of local taxation is very low, and as explained later, this is the main cause of the weakness and neglect of local administration in the delta, which have been largely responsible for the low standard of living of the population. The raising of this standard will depend very largely upon the strengthening and improvement of local administration and much less upon the Provincial Government, and still less upon the Central Government. This will necessitate a considerable increase in the level of local taxation, the burden of which will have to be borne largely, though not wholly, by landlords. It will obviously be unfair to increase their burden of general taxation at the same time. However, if the needs of the Provincial and Central Governments were really to be more urgent than those of the local Government, it would be permissible to raise the level of the general taxation paid by the landlords, maintaining without any substantial increase, the level of the local taxation paid by them. But the need for this alternative is not likely to arise in the near future.

Although the Tenancy Act of 1885, as amended by later Acts, has done much to improve the position of the raiyats by lessening agrarian disputes, by checking rapid and excessive increases of rent and by encouraging a more general use of the prescribed form of rent receipts, it cannot be said that it has succeeded in giving adequate protection to the raiyats. The exaction of illegal abwabs from them by the landlords, as explained later, is still very common. Many raiyats are ignorant of the rights granted to them by the Act, and even those, who are not, prefer submission to the landlords' illegal exactions to incurring their permanent hostility by appeals to the authorities and the courts against the exactions. What Mr. P. C. Lyon, Commissioner of Patna, wrote of Bihar in 1904, is true of the Bengal delta also. "While the good that has been done by the Act is apparent

to all, especially when enforced by means of general survey and settlement proceedings, the tenants are generally so poor and so completely in the power of the landlords that they are still found constantly to acquiesce in the flagrant violation of their rights by their landlords, for fear of worse happening to them, and it has become abundantly clear in the opinion of many, whose duties bring them into close contact with the actual cultivators of the soil, that further measures are required to protect those cultivators against the combined efforts of the proprietors and tenure-holders to abrogate the provisions of the Act.”¹ It is found that when the record-of-rights is prepared and copies of the khatian containing all the details of every holding are distributed, the rights of the raiyats are better understood by them and respected by the landlords, and the provisions of the Acts are better observed. But unfortunately no provision has yet been made for the maintenance up to date of the record-of-rights by its punctual correction. Frequent changes take place in holdings through death, succession, transfer, division of fields, reclamation of waste lands and increase of division of rent. Experience of other parts shows that such changes amount annually to between 5 and 10 per cent. of the total entries. If such changes are not duly entered, the record becomes every year more and more out of date, until after a few years it would become totally unreliable and therefore useless. It is therefore essential to provide for the up-to-date maintenance of the record.

Another defect of the Act is that it does not provide adequately for the extraordinarily complicated state of agrarian relations, which has grown up owing to the widespread adoption both by the landlords and tenants of the practice of subdivision and subinfeudation of rights in land. Under the Act, the occupancy tenant right can be enjoyed only by one person in the chain of persons interested

¹ Bengal Land Revenue Report for 1904-5.

in a holding, both as rent-receivers and rent-payers, between the proprietor at the top and the cultivating tenant, and it frequently happens that the occupancy tenant right gets into the hands of the wrong person, and the cultivating tenant, who ought to have the right, finds himself in the position of a mere tenant-at-will.

A third defect of the Act is that the classification of the interests in land into tenure-holders, raiyats and under-raiyats, introduced by it, does not exhaust all the interests found existing in the delta. This has led to practical difficulties in dealing with them, and the policy of placing each and every interest found during the preparation of the record-of-rights, into one of these classes, has, in some instances, disturbed the peaceful relations, that had existed between landlords and tenants.

Finally, the Act contains no provision regarding the transferability of occupancy rights which was left to be regulated by custom. The increase of population after the establishment of the British rule gradually increased the demand for land, and occupancy rights gradually obtained a market value. By 1885 the custom of transferring these rights had become so common, that Government could not ignore it, and legal recognition was given to it in the original Bill, subject to the landlords' right of pre-emption. Field and other authorities, however, expressed the fear that the grant of the right of free transfer to the raiyats, unschooled in thrift and self-control, would be followed by a wholesale transfer of their lands to money-lenders, which would reduce them to the position of landless labourers. It was, therefore, decided to give no legal recognition to the custom, until it had become more powerful. It is true that the raiyats' power of transferring their rights, although unrecognised by law and restrained by customary limitations, has, in some cases, proved most injurious to them, because their land has passed into the hands of money-lenders, from

whom they have had to take sub-leases at extortionate rent. But since 1885, the custom of transferring occupancy rights has made a rapid progress, and they are now freely sold with the consent of the landlords, who grant it only after extorting as large a fee as possible. It is therefore necessary that, in the interests of the raiyats as well as of the transferees, Government should legally regulate this custom, and that it should prevent extortions by the landlords, by prescribing a moderate scale of fees for the registration of transfers.

It has been explained before that, in the interests of the raiyats, the rent which they have to pay to their landlords is not allowed to reach the economic level by the free play of competition, but that legislation keeps it below this level, by making custom still the basis of it, and that, although competition is allowed to influence it, the influence is restricted within definite limits. The advantages supposed to accrue to the raiyats from this legislation are, however, in many cases illusory, and are not really enjoyed by them. In the first place, many of the landlords make up the difference between economic rent and the rent sanctioned by law, by exacting a number of charges not sanctioned by law, so that the tenants in reality have to pay at least the economic rent, which, however, is made up partly of legal rent and partly of illegal abwabs. If economic rent had been sanctioned by law, the exaction of abwabs would have been far less common, because no surplus would have remained in the hands of the raiyats, which was not required for the maintenance of the standard of living to which they were accustomed, and because the abwabs could have been exacted only by entrenching this standard, which would have been a difficult process. But, if the law does not permit the landlords to charge economic rent, this means that a surplus remains in the hands of the tenants, which is not required for keeping up the standard of living to which they are used, and therefore this surplus can be appropriated by the landlords with less

difficulty by levying abwabs. This feature, however, is not peculiar to the delta. It is found in other parts of India also, where the law does not permit the charging of economic rent. For instance, in the Province of Oudh, where the seven years' lease system prevails, the landlords can let the land to new tenants at the end of every seven years when the leases with the occupying tenants expire, but they cannot enhance the rent by more than one anna in the rupee in seven years. In recent years the economic rent has increased in Oudh much faster than the rent allowed by law, partly on account of improved means of communication, but mainly owing to the rise of prices, and the landlords make up the difference between the economic and legal rent by exacting from the new tenants before allowing them to occupy the land or from the old tenants before renewing the leases, a nazarana or premium approximately amounting to the present value of the sum of the difference between the two rents for the next seven years, discounted at a fairly high rate of interest, because such a rate prevails in Indian agrarian finance.

Further, even in those cases, in which the difference between economic and legal rent is not illegally appropriated by the landlords, but is left in the hands of the raiyats, the surplus does not always promote their welfare. Only some of these raiyats utilise it in paying off their debts, improving their standard of living, saving a little capital and then purchasing better bullocks, implements and seed and more manure, and living on their own resources until harvest time. In the cases of the other raiyats, the surplus is swallowed up in wasteful expenditure on marriages and other social ceremonies, in hiring outside labour unnecessarily so that they may live in comparative idleness, in making up the fall in earnings caused by sub-letting some of the fields, or in bringing up a larger number of members in the family, and the surplus is not utilised at all in improving their standard of life or their financial position.

All this, however, does not mean that rent in the delta should not be controlled by law, and that it should be allowed to reach the economic level as the result of the unobstructed play of competition between the landlords and the raiyats, as is done in most western countries. In this respect conditions are yet very different in the delta from those in the western countries. The general standard of living of the cultivators is far lower in the former than in the latter, in fact it is but little above the subsistence level, and its improvement is an urgent necessity. If the law prevents rent from rising to the economic level, some surplus not required for the maintenance of the existing standard, will accrue to the raiyats, and vigorous and organised efforts in various directions can be made to induce those raiyats, who at present waste it away in the ways mentioned above, to desist from such practices, and to utilise it in improving their standard of living. In this case, there will be a basis for working out the desired policy. But if rent is allowed to rise to the economic level, no surplus will accrue to the raiyats, who will be left only with such earnings as are necessary to maintain themselves at the prevailing standard of living, the basis of the desired policy will disappear, and it will be the most difficult task first to raise the standard and then to bring down the level of economic rent in conformity to it. Further, if rent is allowed to be determined by free competition uncontrolled by law, there is the danger that some landlords will charge more than the economic rent, when the competition for land is very keen among the cultivators. The tenants can pay such rent only in one of four ways, firstly, by lowering their standard of living, which will impair their own health and that of their families, secondly, out of some independent income unconnected with their land, such as the wages of their sons who may work in industrial centres, thirdly, by drawing on their capital, by selling their goods or by getting into debt, and fourthly, by exhausting the soil of

their holdings by continuously growing such crops as jute or sugar-cane without any rotation or manuring. In all of these cases the tenants will have to suffer severe hardships.

In the western countries there is little danger that very keen competition for land on the part of the tenants will enable some of the landlords to obtain more than the economic rent, because either, far from there being any pressure of population on the soil, it is considered desirable to attract more people to the soil as in England, or, if any pressure exists, it is incomparable to what exists in the delta, on account of the much greater development of commerce and industry. The farmers in western countries are all at least literate, although many of them are badly educated, they have a much higher standard of life, they are much more business-like and abler to make business calculations and less swayed by purely sentimental considerations, and they will not make higher bids of rent for land than will enable them to maintain the standard of living to which they are accustomed. Moreover, the rural communities in these countries generally control by means of prudential checks, the increase in their numbers, so as to prevent their pressure on the land and the competition for it from increasing to an extent, which would enable at least some of the landlords to demand more than the economic rent. In the delta, on the other hand, the pressure of population on the land is very heavy, it is increasing on account of the absence of prudential checks and the lack of other employment, the competition for land is very keen, the raiyats on account of their ignorance are mostly unable to make any calculations regarding the rent which they can really afford to pay without suffering such hardships as those mentioned above, or they may be prepared to pay more than this rent in order to satisfy their sentiment in favour of obtaining land in the same village in which their forefathers had lived, or a few of them may do the same out of over-sanguine or reckless temperament.

For these reasons, it is impossible to maintain the old fiction that in the delta the tenants and the landlords can meet on equal terms and enter into free contracts. Consequently if the rent in the delta were to be allowed to be determined by competition uncontrolled by law, there is little doubt that the more rapacious and short-sighted landlords would be able to charge more than the economic rent and to cause considerable misery to an appreciable section of the agricultural population.

It is no doubt true that the goal of economic policy in respect of the landlord and tenant system must be what Sidgwick calls "the individualistic minimum of governmental interference."¹ It would seek to realise the greatest welfare of the landlords and raiyats by permitting the greatest possible freedom, and restraining it only to the extent necessary for preventing the economically stronger persons from inflicting definite injuries on the weaker, and generally to avoid infringements of liberty. Such a system would offer the best incentive to the promotion of agriculture. But in order that it may work successfully, it is necessary that the landlords should take an enlightened view of their responsibilities, that they should exercise their true function as the leaders of the agricultural industry, that there should be no undue pressure of population on the land and that the raiyats should be literate, accustomed to prudent and thrifty habits, enjoying a high standard of comfort, practising improved methods of agriculture and pursuing co-operation in credit and distribution. These conditions do not exist in the delta, and they cannot be attained in the course of a few years. Until they are attained, the raiyats must receive special protection. It is true that their best protection lies in an improvement in their standard of life and efficiency, but such an improvement in any large measure cannot be secured in the immediate

¹ Elements of Politics, p. 44.

future. It is therefore necessary that, for the present, the protection should take the form of state intervention to keep the raiyats' rent somewhat below the economic rent. This means the retention of the existing system of occupancy rights. It is, however, necessary to modify it in certain respects, because, in the form in which it exists now, it hinders the progress of agriculture by making it difficult for well-intentioned landlords to take any initiative in this progress. For instance, if any occupancy tenants, in spite of the repeated warnings of the landlords, continue to exhaust the soil by habitual carelessness in cultivation, or to damage the crops of their neighbours by neglecting to clear their land of weeds, by draining it into that of their neighbours or by allowing their cattle to stray, it is difficult for the landlords to stop such practices under the present occupancy system. Again, if any landlords, in the interests of the development of their estates, wish to make permanent improvements on the holdings of their occupancy tenants and to charge them extra rent at the rate of 8 or 10 per cent. of the capital cost of the improvements, they cannot do so, in case the tenants, through ignorance of the extent of the advantage that would be obtained from them refuse to pay the extra rent. Further, if any landlords desire to undertake their own cultivation according to improved methods, they are prevented from doing so, in case all their land has already been let to tenants, who have secured occupancy rights. In the interests of the progress of agriculture, it is therefore desirable to modify the existing occupancy system, with proper safeguards to prevent injustice being done to the tenants. What the modifications and safeguards should be, will be examined in a later chapter.

CHAPTER VI

THE STANDARD OF LIFE OF THE INHABITANTS.

It has been explained before that, although the commercial and industrial wealth of the delta is comparatively small, its agricultural wealth, having increased considerably since the beginning of the last century, is very large now. This wealth supports a population, which has been increasing rapidly during the last fifty years, which is so dense as to challenge comparison with those of most of the industrial tracts of the world, and whose general standard of living has, nevertheless, improved a little in recent years. The first two facts become clear from the following figures.

District	Area in thousand sq. miles	Total popu- lation in 1911, in thousands.	Total popu- lation in 1921 in thousands.	Density per sq. mile in 1911.	Density per sq. mile in 1921.
Mymensingh ...	6·2	4,526	4,838	734	776
Dacca ...	2·8	2,960	3,126	1,118	1,148
Bakerganj ...	4·9	2,429	2,624	696	752
Faridpur ...	2·6	2,122	2,250	861	949
Tipperah ...	2·5	2,430	2,743	972	1,072
Noakhali ...	1·6	1,302	1,473	802	972
Pabna ...	1·8	1,428	1,389	867	828
Bogra ...	1·4	984	1,049	724	760

District	Percentage of increase in population during 1891-1901.	Percentage of increase in population during 1901-1911.	Percentage of increase in population during 1911-1921.
Mymensingh	12.75	15.53	6.9
Dacca ...	10.6	11.9	8.3
Bakerganj ...	6.45	5.98	8.2
Faridpur .	5.6	8.7	4.8
Tipperah .	18.8	14.7	9.7
Noakhali ..	13	14	13
Pabna ..	4.84	0.51	-2.7 ¹
Bogra ...	11.78	15.24	6.6

	Area in thousand sq. miles.	Density per sq. mile in 1911.	Density per sq. mile in 1921.
England, Wales and Scotland	89	460	485
Germany ...	209	311	...
France ...	207	189	...
United Provinces ...	112	427	414
Bihar & Orissa ...	112	344	340
Madras ...	153	291	297
Bombay ...	187	145	143
Central Bengal ...	13	565	544
West Bengal ...	14	607	581
North Bengal .	20	522	543

The first regular census was taken in 1872 and the second in 1881, but the figures are not reliable until 1891, and moreover, the boundaries of the districts were changing. But there is sufficient evidence to show that during this period also the population was steadily increasing. The decade 1901-11

¹ This is due to the ravages of malaria in the interior of the district resulting from bad drainage.

was free from any great calamity and appeared to be one of normal progress and the changes in population which took place may be considered normal to the circumstances of each district. But the decade 1911-21 was not one of normal progress. The war brought in its wake a widespread disturbance of economic conditions and an abnormal rise of prices which had their effects upon the birth rate as well as upon the death rate, while the influenza, which appeared in an epidemic form in the middle of 1918 and continued for nearly a year, caused a great loss of life and left a deeper mark on the population of each district than any calamity for a century previously. However, the above table shows that in spite of these disturbing conditions, all the districts with the exception of Pabna retained to a remarkable extent their characteristic of a comparatively rapid increase of population and this fact becomes all the more notable when it is realised that owing to the same disturbing conditions the population of most parts of India either declined or increased only slightly.¹ The increase of the population in the delta since 1872 has been almost entirely the result of the excess of births over deaths, the excess of the immigrant over the emigrant population being comparatively small. It is true that there is an appreciable movement of people from one district of the delta to another, but what these pages are mainly concerned with, is the increase in the population of the delta as a whole. As the population is mostly supported by agricultural resources, it is evident that it must be predominantly agricultural, the proportion of population subsisting upon agriculture being 87, 87, 84, 84, 81, 78, 75, and 68 per cent. of the whole in Mymensingh, Bogra, Tipperah, Bakerganj, Noakhali, Faridpur, Pabna and Dacca respectively. The Muhammadans are in a majority everywhere, forming 82, 78, 77, 76, 75, 68, 64 and 63 per cent. of the whole population in Bogra, Tipperah, Noakhali,

¹ Cf. Bengal Census Report, 1921, pp. 21 and 35.

Pabna, Mymensingh, Bakerganj, Dacca, and Faridpur respectively. They have been increasing faster than the Hindus. This is the result, not of conversion, which for all practical purposes may be ignored, but of a higher birth-rate among them than among the Hindus. However, by far the majority of them are the descendants of converted Hindus, the minority consisting of the descendants of the Afghans and other up-country followers of the Delhi generals, who fought in Bengal before the British rule. Most of the conversions date from the reign of Jalaluddin (1414 to 1430), who was the only real oppressor of the Hindus. Many of the conversions were due to a desire to escape penalties for crime and caste offences, and the lower castes of Hindus were attracted by a faith, which laid down equality among all men. However, it is true that many families among the higher Hindu castes embraced the Muslim faith, either being forced to do so, or in order to secure the material advantages to be expected from such a step. In the census, the Muhammadans are divided into 55 castes, but really these are mere social divisions. The vast majority of them are Sheikhs, and the other divisions are relatively unimportant. Among the Hindus, the higher castes are the Brahmins, Kayasthas and Baidis, who are above the performance of any manual labour; and among the lower castes the following are important; Namasudras, a depressed class of cultivators; Jugis, weavers; Kaibarttas, fishermen and boatmen; Sahas, shopkeepers and merchants; Napits, barbers; Dhopas, washermen; Sudras, domestic servants; Sutradhars, carpenters; Barais, betel-growers; Bhuimalis, scavengers; Goalas, herdsmen; Kumars, potters; Malos, fishermen; Telis, oilmen. Most of the functional castes take part in agriculture also, in addition to their occupation.

Thus all the Hindu castes, with the exception of the Brahmins, Kayasthas and Baidis, are more or less engaged in agriculture. Among the Muhammadans, it is only the old respectable and well-to-do families, which do not pursue

agriculture. Whenever they and the three higher Hindu castes undertake cultivation, they engage hired labour for the purpose, or follow the barga system, under which they allow cultivators to cultivate the land belonging to them or rented by them on the condition of receiving a certain share of the produce, which is generally half. Among the lower classes of Hindus, the Sahas are the least engaged in agriculture as they generally manage to earn good incomes as merchants and shop-keepers. The two classes which form by far the majority of the cultivators in the delta are the Muhammadans and the Namasudras, the Hindu depressed class. The former are intelligent, but rather lazy and very careless in their expenditure, and many of them try to live beyond their means and ultimately come to grief. The Namasudras are more industrious, persevering and economical, but less intelligent than their fellow Muhammadans. Many of them, moreover, ply boats for hire in addition to the pursuit of agriculture, earn fair incomes from this combination, and are, on the whole, a rising class.

Not only have the agricultural resources of the delta increased in recent years, but also their value to the people has increased substantially, as with the expansion of India's trade relations with other countries, the world markets have been gradually thrown open to the products of the delta, for which the effective world demand has gradually increased. This has been especially true of jute, which, during times of trade activity, has yielded a large annual profit to the delta. The average price of jute during 1900-1908 was Rs. 5 per maund, and from 1908 till the beginning of the Great War, it varied between Rs. 7 and Rs. 12 per maund. In the early stages of the war the demand for jute fell immensely, but it revived during the later stages and remained strong, until 1920 saw the end of the post-war trade boom. The rapid increase in the area of this non-food crop has not been a serious inroad on the food

supply of the delta, because jute is not a rival to aman paddy, which is transplanted after jute is cut, or which is grown in land too low for the common varieties of jute. Jute is a rival to aus paddy, but the latter is not relished by the well-to-do, and the cultivators in many cases have continued to grow enough aus paddy to supply fodder for their cattle and food for their own families for a few months intervening between the exhaustion of the previous aman harvest and the gathering of the new harvest. The large increase in the area under jute and the opening of the world markets to the products of the delta, would have been an unmixed blessing to the people if they had been prudent and had utilised their profits in paying off their debts, and in improving their holdings, means of communication and standard of comfort. Their standard of comfort has no doubt increased a little, but a large part of the profits has been wasted away in litigation, in extravagance and in hiring outside labour unnecessarily. The profits have tended to make the cultivators gentlemen of leisure, wasting away their time in idleness. They have given up doing their own earthwork, cutting their own paddy and jute, steeping jute and handling and carrying away their own harvest and have been hiring for these purposes outside labour, mostly from Bihar and the United Provinces. This has increased considerably the demand for labour, and its wages, and the high cost of the labour, which formerly they used to perform themselves, has naturally increased the cost of cultivation to a substantial extent. A large part of the profits of the cultivators, thus, have disappeared into the hands of lawyers and up-country labourers. Although the prices of the staples of export have now declined temporarily owing to general trade depression, the habits of idleness, once formed, cannot easily be given up, and outside labour continues to be employed on a large scale. Had it not been for this increase in the cost of cultivation, the profits of the cultivators would have been larger than what

they are at present, in spite of the fall in the prices of the staples.

It is true, however, that as a result of the profits secured by the cultivators from the opening of the world markets to their produce and of the extension of the cultivated area, their standard of living has improved a little in spite of a rapid growth of population. Houses having roofs of corrugated iron have increased in number, and guest-houses have become more roomy; copper, brass, bell-metal and enamelled iron utensils have substantially taken the place of earthen pots¹; chairs, tables and bedsteads, rude though they may be, have supplemented mats and taktaposhes; tin lamps burning kerosene oil now dispel the gloom of the night or have taken the place of the sparsely used earthen lamps burning fish-oil or sweet oil; indigenous medicines are now used on a larger scale and even English medicines are used to some extent, whereas before the patient had largely to trust to luck and nature for his cure; and more money is spent on things like umbrellas, trunks, looking glasses, pictures and toys, which add to the comfort of life. It is clear, however, that the improvement in the standard of living has not gone far, and that the general standard and mode of life of the present generation of cultivators are not after all much different from those of their grandfathers. Huts, clothing, food, boats, and agricultural implements are the same as those of their forefathers. Corrugated iron roofs and roomy guest-houses existed even in the days of their grandfathers, and they have only increased to some extent in recent years. Moreover, in many parts of the delta, with

¹ "Intelligent and well-informed old men told me that some fifty years ago the raiyats had not even a sufficient number of common earthenware plates. For want of anything better, the Hindu raiyats almost invariably used to take their food on banana leaves and drink water from cocoanut shells. A great improvement has taken place in this respect, and it is now difficult to meet with a single raiyat, who has not a few copper, brass or bell-metal plates and pots." A. C. Sen, Report on the System of Agriculture of the Dacca District, 1897, p. 16.

the large extension of the area under crops, the use of corrugated iron instead of thatching grass for roofs has really become an economy. There is no evidence to show that more money is spent now on wells and tanks than in the past. The tin lamps, wooden hookahs, earthenware, toys and ornaments, which the cultivators bring home from the market, are showy but flimsy and of very poor quality and therefore inexpensive. And although they spend more than their grandfathers, as explained above, on medicines, umbrellas, crockery, cooking utensils, etc., these are not important items in their budgets, and the money spent on them forms but a small part of their total expenditure.

There can also be no doubt that the standard of life of the cultivators in the delta is much lower than that of the cultivators in the advanced Western countries. A comparison with the standard prevailing in the richer and more advanced countries such as Great Britain, Germany, France, Belgium, Denmark and the U. S. A. is out of the question, but a comparison may fairly be made with that in North Italy, where the circumstances and character of the people are not much different from those in the Bengal delta, where nearly as large a proportion of the inhabitants is dependant on agriculture as in the delta, and where the average income of the peasants approaches that of the Bengal cultivators much more than the income of the peasants of the richer countries. Of the food of the North Italian cultivators, a competent writer says, "The people are vegetarians, not from choice, but from necessity. They cannot afford to eat meat, nor even eggs. They sell their eggs and their fowls. They cannot afford to eat wheat bread, but eat maize porridge and maize bread, vegetables and fruit and what the cow produces."¹ Much the same may be said of the diet of the Bengal cultivators with the addition of abundant fish. The houses of the

¹ An article entitled 'Land Cess in Italy and India,' in the Indian Review, 1914.

Italian peasants are built of stronger materials and are better furnished, but they do not contain more floor-space. Their clothes also are made of better cloth and are less scanty. But the better housing and clothing are largely necessitated by the greater rigours of the climate, though greater and better furniture is a distinct advantage to the Italian peasants. Therefore, so far as mere housing, clothing and food are concerned, the Bengal cultivators do not fare badly in the comparison. But these are not the only things which go to make up the standard of life. The phrase ought to be interpreted in a broad sense, and must be taken to include all those conveniences and benefits, which are characteristic of human civilization and progress. When these are taken into account, it is found that the Bengal cultivators do not compare favourably with their fellows in Italy. The writer mentioned above draws the following picture of the conveniences and benefits that are enjoyed by the latter. "There is a protected water-supply; the streets are paved and kept clean and lighted; there are metalled roads to the neighbouring villages; there are a doctor and a midwife paid from the village fund, who have to attend all cases gratuitously; all the male and all the female children are taught gratuitously at the village schools; there is hardly any disease and the mortality is very low; the services of a veterinary, of an agricultural expert and of an engineer are shared with neighbouring villages." All these advantages are not available to the Bengal cultivators. Their water supply is usually unprotected, and frequently becomes vile and a source of cholera; the general sanitation is very defective; the metalled road in the whole delta are very few, the other roads are called roads only by courtesy and at best are fairweather tracks, and they are uncared for and unlighted; the services of a doctor are generally lacking, and therefore there are much preventible suffering and mortality; the services of a trained midwife are also not available in most villages, and

therefore infant mortality is higher than in Italy; the female children receive no education, and the same is the case with the majority of male children; there are periodical epidemics of cholera and small-pox, and skin-diseases and fevers are common; the mortality cannot be said to be low; and although the Veterinary and Agricultural Departments provide a few veterinaries and agricultural experts, their number is so small as compared with the total number of cultivators, that many of the latter are ignorant even of the existence of the former. It is true that the benefits mentioned above are not secured by the Italian peasants for nothing, and that they have to pay much more in taxation than the Bengal cultivators in order to obtain these advantages. But the fact remains that they are enjoyed by the Italian peasants, whereas they are not by their Bengal fellows, whatever be the way by which they are secured by the former. And taking these important conveniences and benefits into account, it must be said that, on the whole, the standard of life of the North Italian peasants is higher than that of the Bengal cultivators. These pages are not at this stage concerned with the ways and means of securing these benefits. Their consideration must be deferred to a later chapter, but it is clear that the standard of comfort of the cultivators of the delta ought to improve along the lines indicated above, and that the gradual acquisition of similar advantages alone will be the true criterion of a growth in the real prosperity and welfare of the people of the delta.

It is true that malaria is less prevalent in the delta than in the other parts of Bengal and in Assam, because most of the rivers in the former are open, tidal and clean-banked, serve the purposes of natural drainage, and flush most of the area. In the other parts of Bengal, the rivers are silting up and gradually heightening their banks and beds until natural drainage is obstructed and is turned away from instead of towards them. The subsoil water therefore cannot drain

away rapidly, remains long at a high level after the wet season, and prevents the soaking-in of rain water, with the result that casual collections of water remain for a long time in every natural or artificial hollow, and afford great facilities for the breeding of mosquitoes. But even in the delta, malaria is responsible for considerable economic loss every year. In addition to causing deaths directly—it is calculated that nearly one-third of the deaths ascribed to fever, under which head the vast majority of deaths are returned owing to the predilection of the chaukidars for fever as the cause of death in any case not obviously due to cholera, small-pox or plague, are the direct result of malaria,¹—it is the indirect cause of a large proportion of deaths, on account of the debility which results from its frequent attacks. Thus it leads to phthisis and dysentery, and is largely responsible in the delta for the prevalence of these diseases and the deaths imputed to them. Moreover, “from an economic point of view common sickness is more important than deaths, for it is the amount and duration of sickness rather than the mortality that tell on the prosperity of a community.”² Thus malaria reduces the vitality of the survivors, and is one of the main physical causes of the comparative lack of energy among the people of the delta.³

If malaria is less common in the delta than in the other parts of Bengal, cholera is more prevalent, and is almost an annual visitation. This is largely due to the lack of proper sanitary arrangements, and the use of the banks of khals, streams and rivers for evacuating the bowels, which pollutes the water. The intensity of the disease depends upon the rainfall and the amount of water in the rivers; when the rainfall is short, the amount of water small, and the current of the rivers slow, the disease is virulent, but when the rainfall is heavy, and the floods large, it is uncommon.

Cf. Bengal Census Report, 1911, p. 70.

² *Cf.* Newsholme, *Vital Statistics*, p. 38.

³ *Cf.* R. E. Vernede, *An Ignorant in India*, p. 59.

It is striking that, while most of the other parts of India have suffered much from the ravages of plague, the delta has been almost entirely immune from it. This immunity is all the more remarkable, because labourers in search of employment constantly migrate to the delta from infected areas. It is, however, the result of several causes.¹ In the first place, the physical conditions of the delta protect it in some degree from the importation of infection, and check the spread of the disease if it infects any locality. Secondly, rats, which first carry the poison, are far less common in and around the houses in the delta than in the other parts of India. The scarcity of rats seems to be due in the first place to the structure of the villages. Whereas in the villages of most other parts of India the houses are closely packed together, the villages in the delta are long straggling lines of houses built on the highest part of the land above the flood level, the houses being often separated from each other by compounds and thickets of bamboos. Secondly, the structure and design of the houses give little shelter to rats, as they are made either of brick and mortar or of thin bamboo matting with a roof of corrugated iron, split bamboo or thin thatch. But the thick mud-walled houses necessary for protection from the greater heat and cold of other parts of India give much more shelter to rats. Moreover, the houses in the delta are on the whole better ventilated and lighted and are made of materials which allow a rapid movement of air, the houses built of brick and mortar being few. Thirdly, the greater tidiness of the people of the delta in and around their houses diminishes the food supply of rats and thus keeps them away.²

If the standard of living of the cultivators in the delta is inferior to that of their fellows in North Italy it does not seem to be inferior to that of their fellows in the other

¹ Cf. *An Account of Plague in Bengal*, Indian Medical Gazette, Vol. XLI, 1905-06.

² Cf. *Bengal Census Report*, 1911, p. 73.

countries of South Europe.¹ Further it is superior to that of their fellows in those other parts of India, which are not irrigated by specially constructed canals, as the former are on the whole more comfortably housed, better fed, less worked and not more scantily clothed than the latter. This is seen from a close examination of their general mode of living. The homesteads in the delta are not crowded into village sites, and are not built in rows on both the sides of the village street, as is the case in most other parts of India. In the latter, villages owe their origin partly to the gregarious instincts of mankind, partly to the convenience to the cultivators in living close to those who administer to the needs which their land alone does not supply, and partly to the necessity for protection, formerly from predatory bands, and even now for cattle as well as men from the wild animals infesting the uncleared spaces which frequently adjoin cultivated fields. The village grew up in some conveniently situated spot in a clearing, in a defensible position and near a supply of water. But in the delta the whole countryside except the land required for habitation has been brought under cultivation and it has been unnecessary for cultivators to herd together for protection. The strictness of the purdah system, which does not allow their women-folk to be seen in public and prevents the men from visiting other houses except those of their

¹ Cf. Calvert, p. 202. Even in the advanced Western countries, the diet of the people is governed more by economic considerations and less by choice than is generally supposed in India. For many generations the pig has been one of the staple articles of food of the English labourer, not because he likes it, but because it is easiest to raise and therefore the cheapest food, the animal subsisting on skimmed milk and wheat husks, which are useless for any other purpose, and thus being a by-product of dairying. He can afford but little butter, and margarine made from imported cocoanuts mostly takes its place. Peasants of Belgium, Denmark and Holland sell their fresh and superior butter and eggs to industrial centres in their own countries and England and Germany, and eat cheaper butter and eggs imported from Siberia. The German eats much cabbage and the American maize, not because they like them, but because they are cheap. The potato is a staple article of diet in all these countries, because it is cheap on account of its very heavy yield.

relations, has checked their gregarious instincts. Moreover they use few things which their own land cannot supply. Again, a water supply can be obtained equally well by digging a tank in almost any spot. Further, the property of a land-lord or tenure-holder is generally far stretched and intermingled with those of others and landless labourers are few. Therefore, it is not surprising that the homesteads are scattered over the whole face of the countryside and frequently straggle along the banks of streams at irregular intervals. Each family has selected a suitable spot for a homestead on its own land, dug a tank or an irregular excavation to obtain earth to raise a site and built a homestead on it. The process is still going on. When a family becomes too large for its homestead or when family quarrels arise, one of the brothers builds a new homestead on a conveniently situated spot in that part of the family land which falls to his share. Shops hardly exist and the houses of landlords and the few artisans who are not partially agriculturists are intermingled with the other homesteads. Therefore, for administrative purposes in the delta a survey unit takes the place of the village unit in other parts of India. It is called mauza, which is often translated 'village,' sometimes with confusing results. The homesteads in the depressions are also built in an irregular line but although they are closer to each other, they are constructed on separate mounds. In the marshes, homesteads are often built round a central tank when the land is so low that it must be raised very considerably in order to keep the homesteads above the flood-level, but isolated homesteads are also common. The homesteads are usually surrounded by gardens, and sheltered from wind and sun by orchards or at least by some fruit trees. That the houses are not crowded into a village site is an advantage from the sanitary point of view, especially as the general

standard of sanitation is low in villages in all parts of India. Each family has plenty of space to live in and its own water supply, which, though it leaves much to be desired, is far better than in other parts of India. But there are no roads, only footpaths connect the homesteads with each other, and frequently even footpaths do not exist.

All people in the delta, except in towns, as in the other parts of India, live in houses built at their own expense, although they have to pay rent for the land to its owner, and the custom of living in hired houses does not prevail at all. For this reason, there is hardly any variety in the structure of the homesteads, all of which are of the same pattern and cover almost the same area. The area covered is in the neighbourhood of a quarter of an acre, except in very low lands, where a plinth as high as from 15 to 20 feet has to be constructed at a considerable expense in order to keep the homesteads above the flood, and where the space devoted to them is consequently much smaller. This area is much larger than that ordinarily devoted to the purpose in other parts of India, and may be taken to be one of the signs of the generally easier circumstances of the cultivators of the delta. The cultivators are usually proud of their homesteads, and spend considerable sums upon them. The site is raised well above the flood-level, the earth for the plinth being obtained by excavating a tank in the vicinity and sometimes by digging a moat round the site. The tank is almost a universal accompaniment of the homestead in all parts of the delta, and is used for obtaining drinking water, bathing, washing clothes and cleaning cooking utensils, and is a great convenience to the women of the household, who are *pardanashins*, and who otherwise would have had to go to the public tank or stream. The quarter acre therefore generally contains a tank, a courtyard round which a number of huts are built, an orchard and

patches of vegetables but sometimes the tank is outside this area. The plinths always consist of mud, and masonry plinths are non-existent, because landlords have an unreasoning prejudice against them, and do not allow them to be constructed. Otherwise they would have become popular and made the homesteads stronger and healthier. The landlords also disfavour the excavation of new tanks or the re-excavation of old tanks. Their opposition is longstanding, but is specially unfortunate in those parts of the delta, where the existing water-supply during the dry months is scanty. Its removal will take a long time, unless special steps are taken for the purpose, because hitherto the landlords have exacted large sums for permitting both excavation and re-excavation of tanks.

The homestead is never a single structure with several rooms, as is the case in most other parts of India. It consists of a number of separate huts built round an open courtyard, each hut containing one room only. The homestead of a prosperous family consists of five or six large huts, besides a kitchen and a cattle-shed. The largest hut is used for receiving visitors and guests, who are not admitted to the other huts, which are the bed-rooms of the family. All the huts have doors, but sometimes no windows. They are not built with masonry, partly because it is much more costly, partly because the landlords do not allow it, and partly because huts made of mats are considered more healthy, as, even if there are no windows and the doors are kept shut at night, mat walls allow enough ventilation, while even the winter being fairly mild, protection against the cold is no consideration. The matting of which the walls are made consists of reeds or grasses woven together and plastered with mud. In the case of poor cultivators, it is sometimes made of jute sticks, but it lasts less and affords less protection against the sun and the rain. Holes in the walls are therefore an obvious sign of poverty. Moreover, in their case, the

doors also frequently consist of matting, and the mat-walls are attached to bamboo poles, whereas in the huts of the well-to-do, the doors are made of wood, and beams take the place of bamboo poles. Again the huts of the former have generally thatched roofs, while those of the latter have roofs of corrugated iron. Tin roofs, although generally a sign and measure of prosperity, are not invariably so, because even the prosperous cultivators in some parts of the delta cannot obtain the sheets in any considerable number on account of the defective means of communication. Tin roofs offer a better resistance to fire than thatched roofs, but they make the huts hotter and less healthy in summer and colder in winter, and give no better protection against the rain than thatched roofs, if the thatch is thick. Further, even in the poorest homesteads, the floor space is generally sufficiently large to meet the requirements of the families occupying them, while in the case of the more thriving cultivators it is plentiful. In estimating the floor space, the courtyard must be taken into account, because men spend most of their time in the courtyard when they are at home during the day, except when it rains, and use the huts only at night. The huts are always well-ventilated, and their roofs are sufficiently high in most cases. The homesteads are thus on the whole comfortable and healthy. This is more than can be said of the homesteads in most parts of India.

In the matter of clothing, the cultivators of the delta are not better off than their fellows in other parts of India, but they are not worse off. The clothing of a cultivator consists of a dhoti, *i.e.*, a piece of cloth about nine feet long and generally manufactured in England, which is wrapped round the waist, and a thick cotton sheet about seven feet long which covers the upper part of the body. When he is at work, a napkin, generally manufactured in the delta and four feet long, takes the place of the sheet. The female clothing consists of a single piece of cloth called a sari, about 14 feet

long. The saris worn by Muhammadan women are generally country-made, coarse and thick, but the tendency for Hindu women is to prefer finer and thinner saris of foreign manufacture. However, clothing is a far less important consideration, in questions of standard of living, in India excepting the Punjab than in the West, on account of the milder climate of the former, and clothes are worn more for decency than for protection against severities of climate. But in the matter of food-supply the Bengal cultivators are certainly more fortunate than the cultivators of the dry tracts of India, because it is more plentiful and more certain. Forty years ago, the cultivators of the delta grew their whole food supply on their lands, or if their lands were not large enough for the purpose, they worked as labourers on the lands of those who had more lands than were required for their food supply, and obtained as wages a part of the harvest. With the extension of jute cultivation, however, and the increase in the profits to be obtained from it, some of the cultivators gave up growing the whole of the quantity of rice required for their own consumption, and began to substitute jute for a part of it, on the calculation that it would pay more to grow jute, and to make up the deficiency of rice by buying it with a part of the profits obtained from jute. No cultivator, however, abandoned growing paddy altogether, because, although nearly all the land in the delta could grow paddy, only a part of it was suitable for jute, and because it was very rare for a cultivator to have all his land suitable for growing the latter. With the decline in the price of jute in the early part of the war and after the peace, the above calculations were upset, and many cultivators found that the profits from jute were hardly sufficient for purchasing their food. They therefore temporarily reverted to the old system of growing the whole of their food supply before growing anything else. In any case, they do not sell any portion of their paddy crop before putting aside the whole of the amount, which, on a generous estimate, would

be required for the consumption of their families during the year. Careful enquiries show that one seer of husked rice a day is more than enough for an adult male, while in the case of an adult female and a growing child the corresponding amount is half a seer. One maund of paddy yields 25 seers of husked rice, and therefore 50 to 55 maunds of paddy are ample for the annual consumption of a thriving family of five persons. In normal years, when the paddy crops are satisfactory, the families are able to eat as much rice as they want. This affords an effective point of contrast between the delta and the dry tracts of India. In the former, the abnormal years occur very seldom, famines are unknown, scarcity is infrequent and is confined to comparatively few and small parts of the delta, and therefore suffering from starvation never prevails on any large scale. In the latter, however, scarcity and famine are more frequent and widespread on account of their entire dependence on the vagaries of the rainfall, and consequently the food-supply is less certain and dangers of starvation are greater.

The Bengal cultivators are again more fortunate in that they are able to supplement their rice diet by plenty of nutritious and tasty fish—a valuable food not available in any large quantity to the people of the dry tracts. In fact, fish is consumed every day at both the meals by everyone. Any one can catch fish sufficient for the consumption of his family without much trouble by walking to the nearest stream with a fishing rod, except at the height of the dry season in those parts in which the stream beds become dry. Besides the fish caught by the consumers themselves, a substantial amount is bought from the fishermen by the consumers, when they have been engaged in other work and have had no time to catch fish, or when fish of a better quality, which may not be easily available in the immediate neighbourhood, is desired. But as fish abounds in all rivers and streams, it is most cheap in all the markets, and a couple of pices (a half-penny) suffice to

buy enough for a meal of a fairly large family. The cultivators rarely eat meat, but their health is perhaps better without it in so warm a climate as that of the delta. The Hindus may, and the Muhammadans generally do, keep goats, ducks and fowls in addition to their cattle, but they seldom eat them and cattle are never killed for food even by the Muhammadans. In addition to rice, fish and pulses, they have milk, curd and ghee, as they regard it undignified to sell the milk of their cows, and the difficulties of distributing the milk would in any case stand in the way of its sale. Finally, they have plenty of vegetables and fruits—the produce of their gardens and orchards. In these two last articles of food, again, they are better off than the cultivators of the other parts of India as, on account of the richness of the soil, the plenitude of water, and the suitability of the climate, their production is more varied and on a much larger scale in the delta than in the other parts of the country.

This description is true of the standard of life of those cultivators, who are not in straitened circumstances. The difference between their standard and that of the needy cultivators consists of a cutting down of the expenditure on the several items, which make up the standard of living of the former, and not of a cutting out of any of the items. They have their own homesteads just the same as the thriving cultivators, only the huts are smaller, fewer in number, and out of repair, with holes in the walls and roofs. Their clothes are tattered and miserable. In the matter of food supply, they can catch as much fish as their prosperous brethren. With regard to rice, it has been found that half a seer per day for an adult male and a little less for an adult female or a child is enough to prevent starvation. Thus from thirty-five to forty maunds of paddy per year are enough to enable a family of five to do its ordinary work, although the amount does not suffice to give its members adequate nourishment for the purpose of possessing full

strength and vigour. In normal years, the family usually obtains a part of this amount from its own land, as landless indigenous labourers are rare in the delta, and the remainder is made up by the two adult males in the family working in the fields of others, as hired labour is much in demand and is well remunerated. Vegetables and fruits complete the diet of the family, because, although it may not have a regular orchard and a garden like the prosperous family, it has at least a few fruit trees and patches of vegetables within the area of the homestead. Therefore, the families in conditions of destitution are usually widows with a number of small children or very old people, who have no relations to support them. When the slack season advances, a few more families may have to beg for food, but when the harvesting season appears and labour is in demand, they get nearly enough to eat. In ordinary years there is little real starvation in the delta, because even if a person cannot earn his meal, he can usually get it by begging for it from the prosperous cultivators, who are always charitably disposed towards their unfortunate brethren. In abnormal years, when there is a partial failure of crops in some parts of the delta, the conditions of life for such people in these parts are naturally much harder, but it has already been explained that such years are rarer in the delta than in the dry tracts of India.

On account of the bounty of nature, this larger yield from the soil is obtained by the cultivators of the delta with substantially less work than that, which the cultivators in most other parts of the country have to perform. If they grow only the winter rice crop (aman), their whole labour for the year is finished within three months—March, April and May. During these months, however, they have to work hard. Getting up at sunrise, they proceed to their fields with their ploughs and cattle, and plough till 10 o'clock, smoking intermittently, when their children bring their morning meal. After the meal, they continue the ploughing till noon, when

they return home, take their bath in a tank or stream and eat the mid-day meal. After taking a short rest, they return to the fields and carry on harrowing or weeding until dusk. Returning home, they sit in the courtyard, smoking and chatting with their neighbours about the crops, till 9 when they take the evening meal and go to bed. The harvesting of this winter crop in December or January is no doubt hard work, as the reaper has to squat down and cut the crop with a small sickle bending to it. But the cultivators always hire outside labour to help them in this work and finish it within a week, reaping in the fields till about 2 o'clock, then returning home and taking the belated mid-day meal, and spending the rest of the day in thrashing the paddy in the courtyard. During the rest of the year, they have next to nothing to do in their fields, and do not even go there, except on occasions.

The cultivators may, however, grow a second crop on their land, a spring crop such as khesari, musuri, mung, gram, mustard, til, etc., or an autumn crop of rice (aus) or jute. To a spring crop they pay very little attention, spending a couple of days in December in preparing the land and sowing the seed, and in February in harvesting the crop. In the case of the autumn crop of rice or jute, no separate ploughing is necessary, as it has already been done in preparing the soil for the winter crop, but the cultivators have to spend some time in July and August in harvesting it. The harvesting of aus paddy takes only a few days and does not involve much labour, but that of jute, as explained before, does take up considerable labour, and from four to six weeks have to be spent in cutting it, steeping it in water, then washing it and stripping the fibre. But in this case also, the cultivators employ outside labour and reduce their own work very considerably. Thus, when their land is not suited to the cultivation of jute, the cultivators have to work hard only for three months of the year, March, April and May, and have no work during the remaining nine months, except some petty repairs to their huts; and

even if jute is grown, the additional work is only for a month and a half, at the most, in July and August. These are very easy conditions of work, for which it is difficult to find a parallel in any other part of India. So, the problem for the cultivators of the delta is not too much work, but too little work. The real problem for them, as will be seen later, is how they should work more in order to be able to increase their income and to improve their standard of living.

The Bengal cultivators have also a somewhat more varied time than their fellows in other parts of the country, probably on account of their greater leisure. It is true that their life is dull as compared with that of the peasants in the advanced Western countries. There are no inns, or clubs or recreation-rooms in which to spend the evenings, and there are no neighbouring towns with theatres or cinemas, such as those which are to be found in countries like England, France, Germany and even Italy. But these amusements exist nowhere in rural India, and if the life of the Indian peasant is comparatively dull, it is less so in the delta than elsewhere. The cultivators find their principal amusement in visiting by turn throughout the year all the markets called *hats* that may be in their neighbourhood. At least half a dozen markets are within easy reach of most villages, so that the cultivators can attend a different market every day in the week, if they so desire. Besides monopolizing most of the trade that is done in the delta, the *hat* is indeed a social institution. It is the cultivators' recreation, and takes the place of the Western inn or public-house. The homesteads being scattered all over the country-side, there are no village streets along which the cultivators can pass, meet their acquaintances, and hear all the local gossip. Further, on account of the strict prevalence of the *purdah* system, the cultivators do not feel free in the houses of their neighbours, unless they happen to be relatives. The *hat* therefore gives them far more opportunities for social intercourse than they could otherwise have had. It is common

for the cultivators to visit two hats a week, even when they are busy with their agricultural work, and during the slack seasons they visit them more frequently, sometimes one every day. They set out early in the afternoon with their sons after the midday meal, taking something with them to sell. If they have none of the staple products to sell, they take with them a duck, a couple of fowls, a fine pumpkin or a jack-fruit. They return home in the evening with some sweetmeats or a little fruit. Their principal object, however, in visiting the hats is not to buy and sell, but to meet their friends, to hear all the gossip of the neighbourhood, to offer advice in cases of disputes, and to enquire the prices of all things that may be exposed for sale in the hats. These matters interest them very much, and they cannot satisfy their interest in them if they stay at home. Before finally purchasing anything, they take a peculiar pleasure in finding out its price from a number of sellers, and haggling over it for a long time, there being no necessity to hurry. Consequently, the business is done very loudly and slowly.

Another amusement of the cultivators, especially during the rainy season, is fishing, a useful pastime to which they are much devoted. During this season all rivers and streams overflow, depressions become lakes, and ~~even~~ fields are flooded with water. Fishes, therefore, large as well as small, are most numerous and can be easily caught in large numbers, especially as the cultivators have a number of contrivances in the shape of rods, nets, traps and baskets. During the slack part of the winter season also they go out to fish, if there is water in the streams or depressions in the neighbourhood. Again, during the rainy season, they take much pleasure in visiting their relations in other villages with their families in boats, which are owned by the more thriving cultivators and hired by others. The boats are fairly large and have cabins of matting, in which the families live while away from home.

The women in the delta perform throughout the year the same usual household duties as in the other parts of India, and have no season of work and leisure. Their life is duller and harder than that of men in all parts of India, but it is more so in the delta than in Western and Southern India, on account of the strict adherence to the purdah system in the former. The women of the delta are confined to their homesteads and have no recreation, but the women of Western and Southern India can move about much more freely. The former cannot go to the fields, and the only part which they take in agricultural work, is to husk the rice and strip the jute fibre in their homesteads, spending a few hours in the morning for a few weeks in these operations while the latter work in the fields and play a much more important part in the economic life of these regions.

It now remains to deal only with the question of the calculation of the income of the cultivators and of the distribution of the agricultural wealth among them. For these purposes several methods may be pursued. One method is to find out the average and the subsistence holding for each district and to compare them. If the former is smaller than the latter, it is a clear indication that the general condition of the agricultural classes is wretched. But if the position of the holdings is reverse, the condition of the cultivators would be better, and the larger the difference between the average and the subsistence holding, the more would the average income be above the minimum income requisite for subsistence. The average holding may be found out from the detailed information about all the tenancies in each district that has been collected in the course of the survey and settlement operations in the different districts. The subsistence holding may be arrived at by deciding upon the amount of rice required annually for the subsistence of an average family of five, and upon the allowance to be made for the salt, oil, condiments and clothes required by the family, for the upkeep of its

homestead and cattle, and for the rent which it has to pay, and by finding out the average production of rice per acre and the amount of production equivalent to the above allowance. It is found that the subsistence holding arrived at in this way varies between 2 and 3 acres in the different districts. The average holding varies in the several districts according to the density of the population. For instance, in Bakarganj, while the subsistence holding consists of 3 acres, the average holding consists of 4 acres of which 3·6 are under winter rice. Thus the average holding contains ·6 of an acre more under rice than is necessary for the family subsistence, besides an additional half acre of garden or miscellaneous crops, while in another half acre a second crop may be grown. On the other hand, in Mymensingh, the average holding contains 3 acres, the subsistence holding, however, consisting of two acres only. However, this method of comparing the average with the subsistence holding is not satisfactory in the delta. It would be profitable only in an area which mostly produces food crops that are consumed by its people. But in some districts of the delta, a large proportion of the cropped area is sown with jute, which must be sold, and the return from which varies considerably from year to year according to the condition of the jute market, and therefore in such districts any calculation of the size of the subsistence holding and a comparison of the average holding with it would not serve any useful purpose. Further, the average holding gives no reliable indication of the economic conditions of the cultivators, unless it is also known how many of them have smaller holdings and to what extent. The average holding may be larger than the subsistence holding, and yet one half or even more of the cultivators may have holdings smaller than the subsistence holding. But, owing to the excessive fragmentation of holdings, it is not possible to obtain any accurate information about the actual holding of each family in a large area in the delta.

Another method of estimating the gross income of the agricultural classes is to calculate the probable value of the total agricultural produce of each district, and to compare it with the total agricultural population of the district. The estimate of the total area covered by each kind of crop, that was made during the survey and settlement operations, is available, an estimate can be made of the average production of each kind of crop per acre, and the average price during a term of years of a maund of each kind of produce can be found out. From these three sets of figures, the probable value of the total agricultural produce of a district can be calculated. However, a substantial margin of error is very likely to exist in these estimates, and therefore the final estimate cannot be very reliable.

The best method is to select typical villages in the different parts of each district and to make a detailed enquiry into the circumstances and economic condition of every family in those villages. Such enquiries were made during the course of the survey and settlement operations in some districts. The Kanungos or circle officers had to examine personally the condition of every family in its own homestead, as the evidence of the eye was rightly considered far more valuable than the evidence of the ear. They then questioned each cultivator closely as to the amount consumed by his family of the different foodstuffs grown by him, and as to the kind, quantity and price of all the food and other necessities bought by him in a month or a year, testing his answers on the latter point by the sums actually expended by him in the previous year. Moreover, the daily consumption of food by the families was watched whenever it was practicable, and the average consumption per head per day was arrived at. In the light of this examination, the families were grouped into a number of classes, according to their standard of living. In Faridpur, for instance, they were grouped into four classes, *viz.*, starvation, above starvation, below comfort, and comfort. “‘Starvation’ implies a condition in which a family has just

sufficient to keep itself alive and no more. 'Comfort' implies a condition in which the material necessities of life can be fully satisfied. The interval between the two is covered by the standards 'above starvation' and 'below comfort.' Where a Kanungo finds an agricultural family well-fed, well-housed, well-clothed, this is comfort. The material necessities are fully satisfied. Where the Kanungo finds a family thin and ill-developed, their garments old and worn, their huts ill-thatched and tumbled-down, this is starvation. In most cases the evidence of the eye is decisive, but there are those of a miser's nature, who live poorly but possess much, and others of a spendthrift nature, who live well but end in ruin. The Kanungo's local knowledge will warn him of such cases." The families, whose income and economic conditions approached more nearly those of the families in starvation than those of the families in comfort, were grouped in the class 'above starvation,' and the families, whose economic conditions approached more nearly those of the families in comfort than those of the families in starvation, were placed in the class 'below comfort.' It was seen that the income and expenditure of all the different families in the same class came almost to the same amounts, and therefore, it became possible to frame a model budget for each class. In Bakarganj and Mymensingh, the families were grouped in three classes, instead of four, *viz.*, 'in struggling circumstances,' 'in comfortable circumstances' and 'in affluent circumstances,' but the principles on which they were based were the same. As a result of these enquiries it was found that the average income per head of the agricultural population varied between Rs. 50 and Rs. 60 in the different districts. The estimates, however, were made before the beginning of the comparatively rapid rise of prices that has resulted from the war, and on account of the depreciation in the purchasing power of the rupee, the monetary value of the average real income must now be somewhat higher.

Further, there are on the whole no considerable inequalities in the distribution of this agricultural wealth of the delta, which is divided in such a manner that the great majority of the cultivators obtain a fair share. For instance, in Faridpur it is estimated that 49 per cent. of the agricultural families are 'in comfort,' that 29 per cent. are 'below comfort,' that 18 per cent. are 'above want,' and that only 4 per cent. are 'in want.' In Bakarganj, among every five agricultural families, one is in affluent circumstances, three in comfortable circumstances, and only one in struggling circumstances. Among the last are included those families, which do not have enough land for their own subsistence, and which consequently have to work as hired labourers on the lands of others. However, they always obtain the amount of food and shelter that is necessary for subsistence. It is found that, of all the districts in the delta, it is only in Mymensingh, that the agricultural wealth is somewhat unevenly distributed, and this is probably due to the existence of a number of big estates. In this district, it is estimated that 4 per cent. of the families annually obtain a net profit of Rs. 800 or more, 36 per cent. a net profit of Rs. 240 or more, and that 60 per cent. are on the subsistence level with no net profit. Therefore, in the delta as a whole, among the agricultural classes, the proportion of families which are very poor is not unduly large, and the inequalities of income among the great majority of families are not unduly prominent.

Among the non-agricultural classes, however, wealth is much more unevenly distributed, and there is a much greater variation in the standard of living, because what Mr. Jack says of Faridpur is much more true of the delta. "In the non-agricultural group, all economic conditions are represented, the wealthy landowner with an enormous income, the lawyer with a large and lucrative practice, the Government official with a fixed and comfortable income, the miserly money-lender with large profits, the prosperous shopkeeper with

his fluctuating returns and at the other end of the scale, the weaver working desperately for a subsistence in a declining market, the anxious fisherman with a precarious catch, the struggling clerk and doctor, the petty trader with his uncertain profits, and the rude unskilled labourer earning when in work more than his simple needs require.”¹ More than $\frac{1}{3}$ of the non-agricultural population is composed of the respectable class, locally called ‘Bhadralok,’ and consisting of landlords and their agents, professional men and clerks, $\frac{1}{3}$ consists of the partially skilled industrial workers, and the remainder of traders, unskilled labourers, etc. The social importance of the bhadralok class is far more than proportionate to its numerical strength, as all men of education and influence and most men of wealth in the delta belong to it, although a large number of it is very poor. The average income of the non-agricultural population is substantially higher than that of the agricultural population, but this is the result of the large incomes enjoyed by the more successful men. The standard of life of such men is higher than that of even the more prosperous cultivators. They eat better and more varied food; their houses are better in size, strength and quality of materials and are better furnished; their clothes are more varied and of superior quality; and they spend more upon amusements, medical treatment, etc. But such men are comparatively few and are mostly the bigger landlords, the Government officials and the more successful lawyers, money-lenders and traders, and it must be said that the standard of living of the large majority of the non-agricultural population is appreciably lower than that of the average cultivator. The economic condition of the non-agricultural population is thus less satisfactory than that of its agricultural counterpart.

¹ Economic Life of a Bengal District, pp. 81-2.

CHAPTER VII.

DEFECTS IN THE ECONOMIC ORGANISATION OF THE DELTA.

Agricultural classes.

It has been explained before that nature is far more bountiful to the people of the delta than to those of the Western countries, and that, nevertheless, the standard of living of the former is much lower than that of the latter. This discrepancy is the result of the existence of a number of far-reaching defects in the economic organisation of the delta, to which attention must be directed, especially as many of them are likely to grow in intensity in course of time.

First of all, there is the indebtedness of the people. The Settlement Officer for Faridpur found from his investigations that, although the number of families in debt among the non-agriculturists was proportionately much smaller than among the agriculturists, the number that was heavily involved in debt was proportionately much larger, and enquiries go to show that conditions in this respect are similar in the other districts also. The reason for the lower proportion in the first case seems to be that many of the non-agriculturists, and especially the unskilled workers, can offer little tangible security and therefore can borrow little or nothing, while the reason for the higher proportion in the second case appears to be that the struggling but respectable classes can secure far larger loans than are justified by the value of the security that they can offer, on account of their high social position.

The indebtedness of the agricultural population may be divided into two classes, temporary and permanent. The former is larger, more than half of the cultivators resorting to temporary loans at one time or another. These loans, although temporary, involve a great economic loss to the

cultivators and many of them tend to become permanent. This temporary borrowing is largely the result of improvidence. Many of the cultivators are in the habit of spending all the proceeds of one harvest before those of the next are secured. They roof one of their huts with corrugated iron, purchase ornaments for their womenfolk, purchase the best available cattle, which they cannot keep during the rainy season on account of the lack of fodder, and spend the remaining proceeds in social ceremonies or litigation. When the sowing season arrives, they are forced to borrow in order to purchase seeds; during the flood season they have to sell their cattle, on account of the great shortage of fodder, at less than $\frac{1}{4}$ of the price for which they were purchased; at the approach of the harvesting season they have to borrow again as their food supply is exhausted. The loans are generally obtained on the security of the sown crops or by pledging ornaments. As the cultivators invest their savings in ornaments, borrowing on the security of ornaments may be said to be their way of realising investments. But it involves a heavy loss, as a high rate of interest has to be paid. One or two annas per rupee per month are commonly charged, and this makes a very heavy interest on loans for even three months. Borrowing on the security of crops upon the ground also involves a heavy loss, as the loans have to be paid back to the money-lenders in the form of unduly large proportions of the crops, and it is common for the money-lenders to obtain in this way in two or three months produce worth three or four times the original loans.

The permanent indebtedness is the result of the working of a number of factors. It is partly the result of poverty, but the importance of this factor is less than is generally assumed. The cultivators in actual want have little credit, and as the supply of loanable money falls short of the demand for it on the part of the cultivators possessing better credit, the money-lenders have no need to risk a large portion of their

money by lending it to the indigent cultivators. It is the cultivators who are above actual want, who possess appreciable credit, but who desire to spend more than they can really afford, that make the largest recourse to the money-lenders. Thus Mr. Jack found from his enquiries that in Faridpur the percentage of cultivators seriously involved in debt was largest in the two intermediate classes of cultivators who lived neither in comfort nor in actual want.¹ Secondly, the indebtedness is partly the result of the necessity of having agricultural capital. It is true that in a region, in which holdings are petty and scattered, and in which the cultivators lack assistance and guidance from their landlords, the provision of this capital is not altogether easy. But among a thrifty population, this capital can be very largely provided out of savings, and cattle, which have died, can be replaced, and houses, which have been burnt down, can be rebuilt, out of savings instead of by means of borrowing. But the social habits and custom of the people make the practice of thrift very difficult.² This leads to the third cause of the indebtedness of the cultivators.

The vital part, which thrift has played in building up the prosperity of the Western countries, is not yet generally realised in this country. Recurring bad seasons and the consequent hard times rendered the practice of thrift by the farmers of these countries essential for existence, and the practice, being long enforced, became a habit. Then, the industrial revolution brought in its wake periods of trade and industrial depression, and the resulting sufferings compelled the industrial workers also to practise thrift as the only alternative to starvation during these periods. Thus all these countries have a vast network of organisations, which have thrift in one form or another as their aim, and which have

¹ Mr. Calvert's experience in the Punjab is also similar. Cf. his *Wealth and Welfare of the Punjab*, pp. 120 ff.

² Cf. *Dacca Survey and Settlement Report*, p. 48.

systematically encouraged the deposit of small savings amounting, in the aggregate, to very large sums. If the people of these countries enjoy a high standard of living at present, it is largely because they have inherited a large amount of capital in various forms, which their ancestors accumulated by practising thrift and saving for several generations.¹ In the Bengal delta, centuries of disturbed conditions, the fertility of the soil, the inconsiderable labour needed to obtain a yield from it, the fact that two crops could be gathered annually, the joint family system and the philosophical outlook on life prevented the growth of this habit, and its people have not only no inherited capital at all comparable to that in the West, but they have also not learnt the habit yet. Until the postal savings banks were instituted, there was no organised institution to encourage small savings, and even these have failed to appeal to the agricultural and artisan classes and are resorted to mostly by petty Government servants, clerks, etc. The great majority of the debtors get into debt on account of wasteful expenditure on ceremonies and entertainments, especially in marriages. The amounts of money that are spent in marriages in the delta as in other parts of India, are far larger than are justified by the incomes of the parties concerned, and a whole year's income of a family is frequently spent in a single marriage. It is not extravagant to assume that in an average family one marriage takes place every five years, and this gives some idea of the strain imposed upon its financial resources. It is found that Mohammedans incur debt for these purposes more readily than their Hindu brethren, who are more thrifty and more alive to the danger of ruin following upon the borrowing of large sums. This is probably due to the larger proportion of illiteracy among the former. It is, however, useless merely to condemn the social extravagance of the cultivators. It is no less a necessity to them than their ploughs and cattle in

¹ Cf. Calvert, pp. 203-4.

the present condition of their social organisation, and cannot be disregarded in the solution of this problem of agrarian indebtedness. Connected with this factor of indebtedness is the fondness for litigation, which frequently leads the cultivators to incur debts.

Finally, a large part of the agrarian debt consists of accumulated interest at a high rate. The highest rate, that the writer has come across, is 150 per cent per annum, but the rates usually charged vary from 24 to 75 per cent largely according to the security offered, the need of the borrower, and the season of the year at which the loan is required. The average rate comes to approximately 45 per cent per annum. The high rates are partly due to tradition, partly due to the fact that the supply of loanable money is considerably short of the demand for loans, and partly due to the frequency with which interest remains unpaid. The unpaid interest is added to the principal sum every year, and the debt thus mounts up rapidly. The rapid increase of indebtedness resulting from the combined working of these different factors may be seen from a typical instance. One Hazarikhan of Kurmitola, a village situated a few miles north of Dacca, possessed a large holding of 15 acres. About twelve years ago, he borrowed a small sum of Rs. 30 for his daughter's marriage. After three years he had to execute a new bond for Rs. 60, as he had paid neither the principal nor the interest. After another three years, the money-lender demanded the payment of Rs. 150 or the cession to him of $1\frac{1}{2}$ acres of the cultivator's holding for wiping off the whole debt. The latter refused to give up any portion of his holding, and borrowed Rs. 120 from another money-lender, in order to repay the loan. The first money-lender, however, would accept the full amount of Rs. 150 being the principal and the interest, or nothing. While the cultivator was considering how to raise the balance of Rs. 30 in order to satisfy his creditor, he decided to get his son

married, and spent all the Rs. 120 in the marriage. His debts to the two money-lenders now amount to nearly Rs. 600, the growth of an original loan of Rs. 30 only in the course of 12 years. His creditors are now threatening to obtain possession of six acres from his holding. This typical instance shows firstly that agrarian indebtedness is not merely the result of the necessity of providing agricultural capital, but is largely due to the imprudence and social extravagance of the cultivators; secondly that, it is not the original loan, but the accumulated interest, which constitutes the larger portion of the debt; thirdly that the cultivators, once a debt is incurred, frequently become more and more involved in the debts of an increasing number of money-lenders; and fourthly that the money-lenders may, and often do, obtain possession of their debtors' property.

Efforts were made in some districts during the course of the survey and settlement operations by Government officers to estimate the extent of permanent indebtedness. Thus in Dacca it was calculated that families occupying 185,869 out of 391,894 homestead plots were involved in debt, and that the total indebtedness amounted to Rs. $4\frac{3}{4}$ lakhs, *i.e.*, to nearly half the value of the annual produce of the soil, to rather more than 12 times the actual annual rental of the land, or to Rs. 36 per cultivated acre. In Faridpur, the total debt was estimated at Rs. 230 lakhs, *i.e.*, Rs. 11 per head of the population, or roughly $\frac{1}{5}$ of the annual income. It was found that 55 per cent of the cultivators were free from debt, and that, of the 45 per cent. who were in debt, more than half were in debt to an amount less than $\frac{1}{4}$ of their annual income. Among the non-agriculturists 73 per cent. were free from debt, but the proportion of families heavily involved in debt was much larger. Thus, among the cultivators the average debt of each indebted family amounted to Rs. 121, but among the non-agriculturists it amounted to Rs. 258. In Mymensingh, the average debt of each indebted family was estimated at less

than Rs. 100, and it could be wiped out by the sale of .08 of the average holding of each family or of .4 of the annual produce of the same. Assuming that indebtedness was distributed among the agricultural families of the different grades in the same proportion as in Faridpur, it was estimated that families free from serious debt were 51 per cent of the total number, that families indebted to some extent but not so far as to find their resources crippled or to find it impossible to pay off all their debts in a few years, even if they made a serious effort, were 43 per cent. and that families heavily indebted were 6 per cent. In Bakarganj, figures were collected only for usufructuary mortgages, and it was found that they covered only .67 per cent. of the land held by the raiyats at a cash rent. But a good deal of the land was mortgaged without a surrender of possession. Most of these figures, however, cannot be taken as reliable. Careful and wide enquiries go to show that they considerably underestimate the extent of indebtedness, and that the real indebtedness is much greater, although it is not possible to determine accurately its magnitude. It is worthy of note that some of the Settlement Officers themselves have admitted that the figures underestimate the indebtedness.¹ However detailed may be the enquiries that are made, it is most difficult to calculate the total indebtedness, as many of the cultivators do not confine themselves to a single money-lender. It is prudent and thrifty cultivators, borrowing very seldom and little in debt, who deal with a single money-lender and it is in their case only that the amount of indebtedness can be accurately ascertained. But the improvident and extravagant cultivators deal with a number of money-lenders. They mortgage some of their fields to one money-lender, others to another, borrow more money from a third on the security of their crops, and pledge the ornaments of their women-folk to two or three others. Such cultivators pay little

¹ Dacca Report, p. 47, Bakarganj Report, pp. 78-9.

attention to their accounts of debts, and it is most difficult to find out even the approximate result of their careless dealings with a number of money-lenders.

Even if the total amount of indebtedness in the delta is not considered to be too large, there can be no doubt that, on account of the very high rate of interest, it is a heavy burden on the resources of the cultivators, especially as only a small portion of it can be regarded as capital employed productively. From careful enquiries the total annual interest in the delta as a whole may be estimated at $\frac{1}{3}$ of the total produce of the soil, at five times the total amount paid to the landlords as rent or at a little less than $\frac{1}{4}$ of the cultivators' average share in the produce. This is a modest estimate, yet it shows that the amount is abnormal. Moreover, most of this large amount is permanently withdrawn from agriculture, only a small portion returning to it in the form of loans for the provision of agricultural capital. By far the larger portion is retained by a small class and serves no economic purpose. If this sum had been available for agricultural improvement, the position of agriculture would have been far better than it is at present. Further, if the present conditions of indebtedness are bad enough, the prospects in the future are worse, unless active steps are taken to combat the evil. Fresh debts are being incurred much more rapidly than old debts are being redeemed, and if indebtedness continues to increase at the present rate, the time will not be long in coming when the majority of the cultivators will be in the clutches of the money-lenders. This is likely to cause a great upheaval in the agricultural conditions of the delta. In some parts of the delta, especially in the Dacca district, the money-lenders are themselves landlords, and wherever this combination prevails, the stability of agricultural capital disappears. A loan is granted for a certain number of years on the security of a raiyat's holding, because his stock and produce are not regarded sufficient security. If the loan is not repaid by the fixed date, the holding is sold,

and is purchased by the money-lender in his position as the landlord of the raiyat concerned. The raiyat is allowed to continue to cultivate the holding, but his rent is raised so excessively as to become oppressive. The writer has come across several cases, in which the rent has been raised in this manner to ten times the previous amount. From the legal standpoint the position of the landlord is quite secure. He has bought the holding, and possesses the right to rent it to anyone at any rate that he may choose. The debtor has no remedy and is left to struggle for the rest of his life in the hands of the landlord. Even when the money-lender is not the landlord, he can buy the holding and re-settle it at an oppressive rent, whether he be regarded as a raiyat or a tenure-holder. There is nothing in the law to prohibit him from taking this action, except section 48 of the Bengal Tenancy Act, which has proved inoperative. Thus the oppression of the money-lender, who combines this role with that of the landlord, constitutes a far greater danger to the stability of agricultural conditions than the oppression of the landlord as such. It is true that this danger has not so far been much experienced in the delta, except in the Dacca district, but signs are not wanting to show that it is beginning to be felt in an increasing degree in other districts also, and if the indebtedness of the cultivators goes on increasing, there can be no doubt that they will come more and more into the power of their landlords in the manner described above, and that the consequent upheaval of agrarian conditions will be a serious calamity.¹

At this stage, the question arises as to how far the co-operative credit movement has succeeded in solving the problem of indebtedness. The movement has existed in the delta since 1906 but it must be admitted that so far its progress has been very slow and that its results have been very disappointing. This will be seen from the following figures.

¹ Cf. Dacca Settlement Report, p. 48.

OPERATIONS OF AGRICULTURAL CO-OPERATIVE SOCIETIES DURING 1921-22.*

All the figures except those in the first two and last two columns are in thousands of rupees.

Classification. Class I Credit. Unlimited Liability.	Number of societies.	Number of members.	Share capital paid up	Reserve fund.	Loans and deposits held at the end of the year from—						Loans made during the year to—			Loans due by—		Profit for the year (the whole added to the reserve fund.)	Most usual rate of inter- est per cent.	
					Members.	Non-members.	Societies.	Provincial or Central Banks.	Government.	Working Capital.	Individuals	Individuals	Banks and societies.	Individuals.	Of which overdue.	Banks and Societies	On borrow- ings.	On lendings.
Dacca	421	9,254	32	79	32	10	1	608	1	762	240	..	..	634	282	1	4 to 12½	12½ to 18½
Mymensingh	537	15,974	47	255	80	90	8	1,182	2	1,664	431	8	1,288	1,288	429	10	4 to 11½	12½ to 18½
Bakarganj	332	7,342	31	82	17	2	41	562	..	735	300	5	624	624	196	5	10½ to 12½	15½ to 18½
Faridpur	423	17,071	15	221	41	18	9	1,022	1	1,327	122	1	1,000	1,000	534	1	4 to 12½	15 to 18½
Noakhali	191	4,413	7	22	8	7	..	256	..	300	114	..	251	251	55	..	9½ to 12½	15½ to 18½
Tippera	525	13,177	47	120	65	6	..	1,026	..	1,264	517	1	1,118	1,118	253	..	9½ to 10½	15½
Bogra	152	3,454	22	38	1	8	..	292	..	362	97	..	310	310	96	..	10½	15½
Pabna	485	15,819	29	294	49	15	19	1,216	..	1,624	225	..	1,306	1,306	366	..	10½	15½

The number, membership and operations of agricultural societies in the other classes and of non-agricultural societies are too insignificant to deserve enumeration.

* Compiled from the Report on the working of the Co-operative Societies in Bengal, 1921-22.

Again, in the district of Dacca, where the progress of the movement may be taken as typical of its progress in the delta, the loans issued by the existing societies benefit only one in every 150 agricultural workers, and for every rupee advanced by the societies, Rs. 238 are advanced by money-lenders. It is no exaggeration to say that in the delta as a whole, the movement, although it has been in existence for fifteen years, has not succeeded in taking over even $\frac{1}{200}$ part of the ground covered by the money-lenders, and that at this rate of progress, it will require three thousand years to eliminate the money-lenders. In fact, the movement has yet no real hold upon the delta. The very slow rate of progress appears to have been due to a policy of undue caution. In support of this policy, it is said that the real advantage of the movement consists of the inculcation in the minds of the cultivators of a spirit of co-operation, thrift and responsibility, and that, if the movement were to be pushed forward rapidly, not only this advantage cannot be secured, but also the movement would be regarded only as means of obtaining loans more easily than from the money-lenders and on cheaper terms.¹ It is true that there is much truth in this standpoint, but caution and slow expansion are comparative terms, and it seems that this view has been allowed to dominate the movement too much.² The cultivators can realize the advantages of the societies only by seeing them actually at work, but under the present conditions they cannot do so, because in the whole delta the societies exist only in a few villages, and partly on account of the defective means of communication, and partly owing to their own stay-at-homeness, the vast majority of the cultivators are ignorant even of their existence. If the number of societies is multiplied with a larger staff for organization and control, the benefits of the movement can be secured without its evils,

¹ Cf. the closing speech of the President of the 9th Provincial Conference of Co-operative Societies.

² Compare Jack, *Economic Life of a Bengal District*, p. 107.

and the cultivators will at least have the chance of realizing the advantages. A practical scheme for this purpose will be considered in a later chapter.

Another evil largely connected with the evil of indebtedness is the prevalence of the *barga* system or the system of produce rent, under which some cultivators have to pay as rent to their landlords far more in produce than their fellows do in cash, and which therefore leads to careless cultivation involving considerable loss. The system is the result of the acquisition of landed property by tradesmen and money-lenders either by regular purchase or by foreclosures of mortgages on the security of which loans have been advanced, the new occupants resettling the holdings at a high produce rent with the former occupants, who become dhakidars or bargadars without any occupancy rights and liable to ejection at will. In some cases a fixed amount of the produce of these holdings has to be paid as rent, in other cases a fixed proportion of the produce. The former method is more pernicious than the latter, because a season of insufficient rainfall or of overflowing is sure to lead either to the immediate ruin of those cultivators, who have to pay a fixed amount of produce, or to their overwhelming indebtedness and ultimate ruin. According to the latter method, the landlords usually receive half of the produce; when jute is grown, they take only $\frac{1}{3}$ on account of the higher cost of producing jute, but they take $\frac{3}{4}$ in the case of grass lands. However, in these cases also the landlords have discovered a method of keeping the bargadars in their clutches. At the outset the latter are compelled to take loans from the landlords ostensibly for the purchase of cattle, implements and seeds, but really to make them remain on the land until the loans are repaid. The loans can be seldom repaid, the interest on them is paid to the landlords in the shape of an additional share of the produce, while the capital remains as a weapon in their hands to be used for keeping the bargadars permanently under subjugation. Another method of

achieving the same object is to force the bargadars to deposit sums of money with the landlords, which are forfeited if the bargadars give up the land. On the whole, the bargadars do not form a distinct class. It is true that there are a few places, in which they are largely landless labourers cultivating barga land only, but in the vast majority of cases they also cultivate land with regard to which they possess occupancy rights. In almost all cases the bargadars provide their own ploughs and cattle; they provide sometimes all the seed, but more usually only half, and if the land happens to be below the ordinary level in fertility, all the seed is provided by the landlords.

The profits to the cultivators from their barga land are far less than those from their cash-paying land. It has been calculated that they stand in the proportion of one to three in the case of jute land and of 2 to 9 in the case of paddy land. Naturally the cultivators neglect their barga land and cultivate it in a careless and slovenly manner, because after all profits afford the only inducement to sustained effort. The value of a crop in any field depends very largely on ploughing it at the proper time, just after the first rain has made the soil soft. The cultivators plough their cash-paying land first, and it is only after it has been completely ploughed that the barga land is attended to. Again, when the plants appear, the same difference is made. The barga land receives little or no weeding, while all the attention is bestowed on the cash-paying land. The result is that the crops of the former are almost invariably much poorer in quality and quantity than those of the latter.¹ It is estimated that a

¹ According to Mr. Calvert, a similar difference in the standard of the cultivation of land held at produce and at cash rent prevails in the Punjab also; see his *Wealth and Welfare of the Punjab*, p. 89. Carver says, "Generally speaking, the reasons are overwhelming in favour of cash rents: under the share system, the tenant is less assiduous in cultivating the soil; cash tenancy leads to more thorough farming, but endangers the future fertility of the soil. The cash tenant gets all the advantage of his superior cultivation, whereas the share tenant gets only a share of that advantage. Under the principle of diminishing returns, the cash tenant can afford to increase the intensity of his cultivation up to a higher point."—*Principles of Rural Economics*, p. 231.

crop grown on barga land is hardly worth $\frac{2}{3}$ of the value of the yield of similar land held at a cash rent. The Settlement Officer for the district of Dacca goes so far as to assert that the difference between the cultivation of the two kinds of land is easily perceptible to the eye. "I have walked over villages when the first spring showers have fallen, and I have pointed out to the villagers at sight their barga lands. In 9 cases out of 10 my description has proved to be correct."¹ There is probably some exaggeration in this statement, because the most experienced agricultural officers say that it is not possible to distinguish between the two kinds of land at sight in this way. But it contains much truth, because there can be no doubt that the loss of wealth resulting from the prevalence of the barga system is considerable. From the statistics collected by the Settlement Officer for the district of Dacca, it appears that in this district nearly 10 per cent. of the net area under cultivation is held at produce rent and that, if this area had been at cash rent, the annual wealth of the district would have been greater by Rs. 29½ lakhs. The magnitude of this loss will be better understood when it is pointed out that it amounts to Rs. 6 per head of the agricultural workers, or to 5 times the total land revenue, or to 6 per cent. of the total agricultural indebtedness of the district. This loss, serious enough at present, is bound to continue to increase as the money-lenders continue to acquire the rights of the cultivators in the land, and to transform cash-paying land into barga land. It is true that the conditions in this respect are rather exceptional in the Dacca district, and that the system prevails to a much less extent in the other districts of the delta. But signs are not wanting to indicate that in some of these districts the danger is increasing and requires remedial action.

The rapacity of landlords is responsible for another evil, *viz.*, the prevalence of levies from the tenants in addition to

¹ Dacca Settlement Report, p. 50.

the rent. Of these, one, consisting of a premium (salami) on the transfer of a holding or on the creation of a new tenancy in old or newly formed lands, does not appear to be illegal. When a holding is transferred, the premium exacted by the landlord varies from 15 to 33 per cent. of the purchase-price. In the case of new chars, the premium varies with the condition of the chars, the title of the landlord, and the extent of the help which the landlord requires from the tenant for enforcing and retaining his title. All the other levies, going under the name of abwabs, are altogether illegal, but are universal. They may be divided into two main classes, the routine abwabs consisting of regular demands usually of a certain percentage on the rent payable but occasionally of fixed amounts, and the ceremonial abwabs consisting of demands of lump sums on certain occasions only. A few of these abwabs date from the beginning of the 18th century, when they were imposed to make up the additional revenue demanded by the authorities. They were recognised by the British administration, when the country came under their rule, but they were added to the rent, and the levy of fresh abwabs was prohibited. The administration, however, failed to realise the impossibility of thus abolishing a practice, which had existed for some generations, by a mere stroke of the pen. Consequently, although rents were enhanced, abwabs continued. This precedent, once created, has been followed by later generations of landlords, and periodically rents have been increased by the inclusion of abwabs, and fresh abwabs have been immediately levied. Thus the evil of the system consists, not merely in the amount of abwabs, but also in the handle thus afforded to the landlords for increasing rents periodically. Other abwabs appear to be modern innovations, not older than 60 or 70 years, and slowly increasing during the latter part of the last century. Their levy instead of an increase of rents seems to have been the result of the fear of agrarian disturbances, which often followed

an increase of rents. Such an increase, if successful, augmented the income of the landlords much more than a number of petty abwabs could do. But, whereas the former was almost sure to lead to a long conflict with the tenants with the possibility of the intervention of the authorities, the levy of the latter, one by one, was too small at a time to lead to any organised resistance on the part of the tenants. The agents of the landlords also preferred the imposition of abwabs to the enhancement of rents, because, the abwabs being entirely arbitrary, they could obtain a share of the yield from them. Furthermore, the abwabs yield a special gratification to the landlords, because their levy gives the appearance of the exercise of the rights of sovereignty. The landlords feel that as rent-receivers they are only the lords of the land, but that as the receivers of the yield of the levies, that they choose to impose, they are the lords of subjects.

Routine abwabs, in the shape of annual levies for the purpose of covering all costs of collection and for the upkeep of the landlords' agents, are universal under the names of tahuri, rashami, mamuli, rariana, tahasilana, sahana, pyadgan, rajdbuti, etc., and frequently two or three of these are imposed on the same land. The majority of them are assessed on the rent and vary between 1 and 4 annas in the rupee, but the others are assessed on holdings. Besides these general levies, there are special ones, such as khalbandi (embankments), pol kharach (bridges), dak kharach (post), bhandari kharach (markets), and those for the maintenance of schools, dispensaries, temples, etc. The sums received from such levies are always far greater than the sums expended upon these objects, and sometimes the institution, for the upkeep of which money is received, does not exist at all. Similarly, the public works and road cess is very often realized from raiyats at twice or thrice the legal rates. Dakhila kharach is levied for the grant of a receipt for the payment of rent. Other annual levies are punya and nazarana at the rate of a rupee or more per tenant,

and bhet or gifts of garden and farm produce. In some estates, the system of begar or forced labour for a certain number of days in the year still prevails, and the tenants have to clear the jungle on the landlords' land, to plough their arable land, to work in their orchards, to excavate tanks, to dig ditches, to construct temporary buildings, and to carry the material for permanent buildings. This system is most unpopular, and even those tenants, who pay the abwabs without any grumbling, complain bitterly against it.

The second class of abwabs, the ceremonial abwabs, consists of the exactions by the landlords of money, commodities or labour from their tenants on certain occasions. Thus sadiana or marriage taxes are levied upon the fathers of every bridegroom and bride. The rate not only differs from estate to estate, but it is also different for tenure-holders and raiyats, for Hindus and Mahomedans, and sometimes for the different castes among the Hindus. However, it generally does not exceed Rs. 10, and is lower for the bride's father than for the bridegroom's father. Then chanda or subscriptions are exacted on the occasion of marriages or shraddha (funeral) ceremonies in the landlords' families. The subscriptions vary from estate to estate, but frequently yield $\frac{1}{4}$ of the annual rent received by the landlords. There are in addition sumptuary taxes—10 and 25 rupees for the permission to use a small and a large palanquin, and 20 and 40 rupees for the permission to use a large umbrella and an elephant on the occasion of a marriage ceremony. Charges are also made for the permission to dig or re-dig tanks and ditches, and besides a cess has to be paid, varying according to the area taken up by the tanks.

Besides the abwabs, in many of the larger estates fines are levied for offences after trials by the landlords or their agents. When the tenants approach the landlords for a settlement of their petty disputes, of their free will, no objection can be taken to this system. But when fines are levied

for the breach of impossible estate rules or for refusing to comply with the oppressive and illegal demands of the landlords, or when the agents decide disputes against the wishes of both the parties to them and appropriate for themselves a large portion of the fines imposed, the system becomes an engine of oppression. In well-managed estates the system is not abused, but when the landlords are in the hands of their own agents, it becomes oppressive, as false complaints receive encouragement, as unnecessary interference in petty village disputes and social affairs is resorted to, and as large fines are imposed for the most petty offences.

In those estates in which there is a large number of petty co-sharers, or in those small estates from which the landlords are absent, the abwabs and fines cannot be imposed at all or can be levied only to a small extent, because the position of the tenants is strong, and that of the landlords is so weak that the most that they can do is to enforce the regular payment of the rent. In the intermediate class of fairly large estates from which the landlords are absent, and of smaller estates on which they are resident, the abwabs and fines are levied to a greater extent, but economically they are not a serious burden upon the tenants, although their moral effect is bad. But in the large estates on which the landlords are resident, the burden is felt seriously, and in the more remote parts of the delta, such as the south of Bakarganj, where the administration is a little less strong and effective than in the other parts, the burden is even greater. In most of the estates the exactions are made by covert intimidation and there is no physical oppression. But in some of the largest and the most powerful estates overt intimidation is sometimes resorted to, and illegal evictions, false criminal prosecutions, fortuitous fires and the destruction of homesteads by means of elephants are the methods employed for this purpose. Most powerful landlords maintain a number of village headmen and peons, whose pay consists of a share

of the proceeds of the illegal levies which they help to collect. But, besides these, a few of the more unscrupulous landlords have been in the habit of maintaining a body of clubmen called lathials and of employing them for crushing by physical force any opposition on the part of the tenants. Another method of compelling the tenants to pay the exactions is the threat of a suit for arrears of rent. In most such estates no receipts are granted for the payment of rent, and although the tenants may have paid all the rent due from them, they can offer no proof of it, if such a suit is brought against them. The payments made by them are credited against rent only after the amount of the abwabs due from them has been deducted, so that they have no choice but to pay the illegal charges. A prosecution in the courts for extortion has no chance of success, and, in fact, in any litigation with the landlords, the tenants are placed in a very unfavourable position on account of the absence of rent receipts. Consequently, hardly any attempt appears to have been made by the tenants to get rid of the exactions by resorting to the laws of the land.

The intensity of the above-mentioned exactions also depends to a considerable extent upon the number of landlords' agents. Most of the landlords in the delta do not pay their agents even a living wage. The latter receive only a nominal pay and are allowed to make up the deficiency by preying upon the tenants. Some landlords go so far as to choose their agents by public auctions every year, the highest bidders being permitted to victimize for a year the cultivators placed under their control. The bargain proves profitable to both the parties. Moreover, even if the landlords were to pay a living wage to their agents, the latter would continue to add to it by the illegal levies until the tenants learn, and are better assisted, to protect themselves. When the exactions can be obtained easily, men are ready to become the landlords' agents for a nominal pay, the number engaged in this manner

increases in proportion to the weak position of the tenants and their incapacity to resist these demands, and the agents can fatten on them without any difficulty. The position in this respect in the different districts is brought out by the following figures :

Number of Cultivators per Landlord's Agent.¹

Noakhali	...	...	...	2,436
Tippera	...	...	...	1,768
Faridpur	...	...	...	1,034
Mymensingh	...	...	...	1,009
Bogra	...	...	...	767
Pabna	...	...	...	524
Bakarganj	...	...	...	508
Dacca	...	...	...	504

The number of landlords' agents has diminished substantially in all the districts during 1911-21. This is largely due to the fact that, owing to the preparation of a record of rights, so large a collecting staff as before is no longer required, but it is also an indication of the beginning of a change in the attitude of the cultivating classes towards illegal exactions. Moreover, it should not be supposed from the above statement that the number of agents as compared with the number of cultivators is much larger in Dacca than in Noakhali, solely because they find it much easier in the former district than in the latter to prey upon the cultivators. In this matter, other factors must also be taken into account. A larger number of agents must be appointed for collecting rent in those parts, in which the proprietary and lesser rights are specially complicated or minutely subdivided than in the parts in which the rights are more clearly defined and extensive. Again, it is necessary to employ a larger number of

¹ Bengal Census Report, 1921, p. 387.

agents if the owners of many small intermediary interests are employed in Calcutta or elsewhere, away from their land. This is the case, for instance, in the Munshiganj subdivision of the Dacca district. But, it still remains true that the more numerous the agents in proportion to the tenants, the greater is the burden of the illegal exactions upon the latter, and that in Noakhali and Tipperah the tenants protect themselves more from the oppression of the agents than their fellows in Dacca and Bakarganj.

What has been mentioned above shows that in the more remote parts of the delta, such as the south of Bakarganj and Faridpur, the strength of the administration and the security of life and property—primary conditions of economic well-being and progress—have been rather less than in the other parts of the delta. In the former, fights between the zamindars, agrarian riots on the part of the oppressed tenants, the use of criminal force against them by the clubmen of zamindars, dacoities, robberies and murders have been more common than in most parts of the country. The blame must be largely attached to the geographical situation of these parts. In these as elsewhere, all executive authority has been concentrated at the headquarters towns, but while in the other districts all the parts are accessible within a short time, this is not the case in the areas under consideration. These are divided into a number of compartments by large rivers, which make them accessible only after considerable delay, and during rough weather not at all, each compartment is cut up by numerous smaller rivers and streams, which have neither bridges nor ferries, and the areas possess several impassable marshes and are covered with water for several months in the year. Moreover, the cultivators in these parts frequently live at considerable distances from each other in homesteads which are screened by orchards and surrounded by deep and wide moats. Thus in these parts there are no village sites, no village communities and no sense of unity and co-operation,

and the administration has to deal with each family and not with the community. Hence both the administrators and the people find it difficult to reach each other. Even in the primary duty of detecting and punishing crime it is found that these conditions make its detection and suppression difficult. It was believed that the record-of-rights, which was prepared during the survey and settlement operations, would considerably reduce crime and disturbances, by recording the exact rights of the landlords, the tenure holders and the raiyats and by removing in this way the very cause of agrarian disturbances. But so far, this hope has not been realized to any substantial extent. A centralized administrative system can be effective in these parts, only if the means of communication are radically improved, if steamers work regularly on every large river, if every stream is bridged, and if every village is made accessible during the dry season by a network of roads. But this is very difficult to achieve on account of its enormous cost, and even if it is achieved, the means of communication can never become as rapid and easy as in the drier parts. Effective decentralization seems, therefore, to be the only remedy.

Another defect in the economic organisation of the delta is the fact that many of the agricultural holdings are uneconomic in size, shape and constitution. The standard for an economic holding depends upon a number of factors, such as the nature of farming, the capacity, resources and ambitions of the cultivators, the pressure of population on the soil and the laws of inheritance, and it is not possible to lay down a rigid standard for any country. But within broad limits a definite standard can be arrived at as suitable for a particular tract after taking these factors into account. In the delta uneconomic holdings have two features, 'subdivision' and 'fragmentation,' which must be distinguished from each other. The former refers only to the size of the whole holding, and is sure to take place in any densely populated tract in

which the number of people directly dependent on the soil increases, but it is also largely influenced by the prevailing law of inheritance. In the delta, according to the Hindu law of inheritance, each male member of a family is entitled to an equal share of the family property and according to the Muhammadan law the right is held by female members also. These laws, therefore, have had a large influence in determining the size of the holdings. It is true that subdivision of land is not always an unmixed evil, that it tends to produce a wide and equitable distribution of wealth, and that it gives a large proportion of cultivators an abiding interest in the land which they cultivate. But when the subdivision becomes so far advanced as to make many of the holdings distinctly uneconomic, it becomes an undoubted evil.

‘Fragmentation’ refers to the cutting up of a holding into a number of plots separated from each other by considerable distances. It results indirectly from the law of inheritance mentioned above, but directly from a desire to obtain a mathematically correct division of a holding among the heirs in order to avoid all disputes. For instance, if a cultivator dies leaving a holding of 12 acres consisting of four separate plots of 3 acres each, to four sons, the latter will not ordinarily take a solid plot of 3 acres each, making up in money any difference that may exist in the qualities of the plots. But each plot will be divided into four sub-plots of $\frac{3}{4}$ acre each, and a sub-plot from each of the original plots will be given to each son, with the result that each of the four holdings carved out of the original holding of 12 acres will consist of four separate plots of $\frac{3}{4}$ acre each. Furthermore, each plot will be divided in such a way as to make an equal division of good and bad land, frequently leading to a partition into a number of long and narrow strips. While ‘subdivision,’ if not carried to excess, has some advantages, ‘fragmentation’ has none and is an unmixed evil. The outcome of the operation of these two forces is that the land of the delta is cut up into an enormous

number of plots, in which a large proportion of the cultivators have some share, although it may be small. These drawbacks, however, are not peculiar to the delta. The same problem exists in other parts of India and the world as the following figures show, although the average size of holdings is greater elsewhere :

				Acres.
Bengal	...	...	...	3
Punjab	...	..	...	6
Bombay	...	...	...	7
Belgium	...	...	...	5·7
France	...	...	...	15·05
Germany	...	...	...	19·25
Denmark	...	...	...	35·59
England	...	...	...	26·95
Scotland	...	...	...	56·31
Wales	...	...	...	38·05 ¹

The evil effects of excessive subdivision and fragmentation of land can be easily noticed in the delta. The smallness and scattered nature of holdings place great difficulties in the way of proper cultivation even by the present methods. They involve the use of lightest ploughs, even though they may not be suited to the soil, for ease of transport, and yet time has to be wasted and difficulties are experienced in transporting the ploughs from one field to another. They involve the possession of a disproportionate amount of agricultural stock, the distribution of which in the delta is very irregular and altogether unorganized. In short, they render impossible any effective organization of labour and capital. In some parts of the delta the waste is reduced to some extent by the prevalence

¹ Cf. Keatinge, *Agricultural Progress in Western India*, pp. 63-71; Mann, *Land and Labour in a Deccan Village*, study No. 1, pp. 43-9, and study No. 2, pp. 40-5. Jouzier, *Economic Rurale*, pp. 347 and 352; Rowntree, *Land and Labour, Lessons from Belgium*, p. 106, and Sir James Wilson, *Recent Economic Development in the Punjab*.

of the system of gkata or exchange of labour described in an earlier chapter, but in the delta as a whole the system does not prevail to such an extent as to reduce the waste substantially. It is more in the preparation of the soil and the care of the tender plants than in the reaping and the sale of crops, that the waste is mainly noticeable. Furthermore, the excessive subdivision and fragmentation of land present a fundamental obstacle to the adoption of improved technical methods or economic organization, which would increase the quantity or improve the quality of the yield of a crop or cheapen its production. The employment of improved agricultural implements and the purchase of stock only to the extent scientifically required are not practical propositions under the present conditions. Again, open and scattered fields do not give the cultivators complete freedom over their cropping. A cultivator, more intelligent than his neighbours and wishing to introduce new crops or an improved system of rotation, which he may regard as more profitable, finds that he cannot do so unless the crops can be cut at the same time as those of his neighbours. For, cattle are set loose to eat away the stubble as soon as a crop is cut, and as fields are open and scattered throughout the area of the village, they wander over the whole area and cannot be confined to the fields of their respective owners, so that every cultivator finds his neighbours' cattle wandering all over his fields.

These defects also impede the carrying out of permanent improvements in the holdings. There are two fundamental units in agriculture, the holding and the cultivator. For progress, it is essential that the former should be fixed and permanent, enabling permanent improvement and progressive development, and that the latter should be fluid and movable in order that the holdings may get into the hands of efficient and energetic men. But in a large part of the delta conditions are the reverse of these ; it is the holding which is fluid, and it is the farmer who is fixed and immovable. It will pay

to develop and improve a holding of 10 or 20 acres, if it can be depended upon to retain this size. But, if it is going to be split up in the near future, its development and improvement will not be undertaken, because the capital and labour spent upon them will be wasted. Consequently, not only is most of the land in the delta altogether undeveloped, but also the very idea of progressive development is not appreciated by most of the cultivators. Then as regards the other unit, the cultivator, although his holding may periodically become smaller and more fragmented, he remains a cultivator, whether he is efficient or not. In highly individualistic and well-organised communities, efficiency and progress are achieved in most economic activities by the elimination of the inefficient, who are forced out by a severe competition combined with a high standard of living. Thus in England during times of agricultural depression, inefficient farmers have lost so heavily as to be driven out of agriculture, and it is generally understood that, in certain parts of the country, even during good times, a farmer will be ruined in a few years, if his methods are unprogressive. But in the delta, as in other parts of India, outside competition is far less severe, the standard of living is far lower, and the joint family system helps the inefficient cultivators to struggle through bad times, with the result that they persist in their calling and impede the progress of the efficient cultivators.¹ Finally, the subdivision and fragmentation of holdings frequently give rise to quarrels between neighbouring cultivators, leading to permanent enmity and litigation. The evil effects of the system may be summed up by saying that it generates a generally uneconomic situation.

It would, however, be misleading to conclude from what has been said above that wholesale large-scale farming in the delta is to be advocated. Such farming is not suited to the

¹ Cf. Keatinge, *Agricultural Progress in Western India*, pp. 184-6.

spirit of law and agriculture in India, which necessitates a widespread distribution of land for purposes of cultivation, and the creation of big estates run on capitalistic lines except in special cases in which special advantages to the community may be expected, would not suit the social and economic organization of the people. All that was intended above was to point out that in many cases subdivision and fragmentation of land had been carried so far as to make the holdings distinctly uneconomic. Remedies will be suggested later not for creating large holdings, but for forming and maintaining small but economic holdings, on which the cultivators will be able to obtain full advantage of the natural facilities, that may exist, by means of an effective organization of capital and labour.

The excessive subdivision of holdings is largely responsible for another defect, mentioned before, in the economic organization of the delta, *viz.*, the comparative laziness of the inhabitants in general, as it spares most of them the necessity of finding any employment other than in agriculture.¹ The landless labourers in the delta are few, and most of them are immigrants from Bihar. The census of 1921 shows that the men who cultivate their own land are 26 times as many as the field labourers. In England, on the other hand, the labourers working for farmers are $3\frac{1}{2}$ times as many as the farmers themselves. The English farmer engages a labourer only when he has sufficient work for him to do, and so the number of people engaged in agriculture in England depends entirely upon the real work to be done, thus avoiding all waste of labour. But in the Bengal delta, the sons of cultivators will not sell off their rights in land and take up any other employment, even though the amount of land falling to their share will keep them far from fully occupied, so long as it can yield them a crop just enough to live on.

¹ Cf. Mr. W. H. Thompson's article, 'More Work, More Pay,' in the *Calcutta Review*, April, 1922.

Consequently, the extent of land cultivated by an agricultural worker in the delta is on the average very much less than that cultivated by his fellow in England. The following figures make the difference quite clear.

District.	Cultivated area in acres.	Male workers in agriculture.	Acres per male worker.
Tippera	1,092,365	532,356	2.05
Mymensingh	2,447,894	1,111,319	2.20
Dacca	1,355,653	515,134	2.63
Faridpur	1,279,900	443,221	2.89

The cultivated area in England and Wales is a little over 26 million acres, and the number of agricultural workers according to the census of 1911 was 1,253,859. These figures give 21 acres per worker as against less than 3 acres in the delta. This shows how much less does the Bengal agriculturist work than his fellow in England. It may be objected that this comparison is not quite correct, because while the former gets practically no help from mechanical appliances, the latter does so to an appreciable extent. This objection is no doubt valid, but even after making a due allowance for this factor, the difference between the amount of work done by the two sets of workers remains striking. Moreover, even in the days before mechanical appliances came into general use in England, the agricultural worker cultivated far more land and did far more work than the worker in the delta. Thus in 1851 the number of male agricultural workers in England and Wales was 1,544,089 and the cultivated area was not less than now. This gives 17 acres per worker. In the large wheat-producing areas of the world, where mechanical appliances and power are used more than in England, for instance in the Western States of America and in the Argentine Republic, the extent of land cultivated by each worker on the average is far greater. Thus the average agricultural worker in England cultivates from

8 to 10 times as much land as the worker in the delta, and if on the one hand, the former obtains appreciable help from mechanical appliances, it should be remembered on the other hand, that the paddy lands of the delta yield their crops with less labour than almost any other land. The root crops in England would fail almost entirely, if the easy agricultural methods of the Bengal delta were to be applied to them.

Further, the occupational caste system seems to have prevented the growth of cottage industries subsidiary to agriculture such as those which are found in most other countries. There is a great waste in suppressing a natural aptitude for any work, because that work belongs to another caste. The German and Russian peasants make toys and wooden articles in their spare time; the English produce honey, poultry, fruit, baskets, etc., and similar activities are found in almost every country. The Indian peasant seems to be the only instance of a small holder endeavouring to make a living out of the plant products of his holding, and he has not yet begun to follow the example of his fellows in other countries.¹

The laziness of the inhabitants of the delta seems also to be partly due to the climate. That climate affects the energy of workers is generally acknowledged by all, and Professor Ellsworth Huntingdon of the Yale University has examined this problem in considerable detail in his book, 'Climate and Civilisation.' From a number of records of work performed under different conditions of climate, he comes to the conclusion that the degree of human energy that can be found or expected in a country depends to a large extent upon the climate of that country, and that the important climatic factors from this point of view are the mean temperature from month to month, the amount of change from one

¹ Mr. Calvert mentions that efforts to induce the Punjab peasant to imitate his fellows in other countries in this respect have not yet achieved any measurable success; *Wealth and Welfare of the Punjab*, p. 216

day to another, and the relative humidity. Pronounced seasonal changes, if not too violent, are advantageous, because uniform climate, even if the temperature is suitable, produces a deadening effect. It is important to notice that he assigns India a low rank in the list of countries graded according to their climatic advantages for human energy. According to him the best climate for physical work is that in which the daily mean never rises above 65° or 70° and never falls below 45° or 50° . With regard to humidity, with an average temperature of 65° to 70° , a relative humidity of about 60 per cent. is the most advantageous, and at higher temperatures a lower percentage of humidity is to be desired. Applying these considerations to the delta, it is found that during a large part of the year, the daily mean temperature is considerably above 70° , that the seasonal changes of climate are less marked in the delta than in many parts of India, and that the humidity in the delta, which is the land of rivers and streams, biggest in size and largest in number, and of floods, is not only far greater than is desirable according to the above formula, but is also much greater than that in the other parts of India. The climate also works in another way to make the inhabitants lazy. Its mildness makes necessary comforts few. Houses built for protection from the cold and wind are not required, and clothes are worn for decency and not for warmth. Food is required, but meat, which is the most expensive item in the budget for food in colder countries is perhaps unnecessary in this warm climate. So far, the inhabitants have, on the whole, been able to meet these simple needs by cultivating the plots of lands which have fallen to their share, although the land cannot utilise all the labour that they are capable of performing, and for the lack of a conscious desire to improve their standard of life, they have not yet taken to other and more paying forms of industry.

There is also a great waste of the labour of the whole of

the female population, which, on account of social restrictions, can perform only purely household work. In the Western countries the proportion of female labour to the whole is high, its efficiency comes up to the requirements of the work done, and as the contribution it makes to the national wealth is substantial, none of these countries can maintain its present standard of living, if the female labour were to be excluded from all but the purely domestic tasks. The delta thus wastes away what is a vital element in the welfare of the western countries.

Finally, although agriculture is the oldest and by far the largest and the most important industry in the delta, it receives, with a few exceptions, practically no attention from the educated, who migrate to the towns and deprive agriculture of the skilled direction and the attention of the trained intelligence, which are so essential for its progress. The movement to the towns would be desirable, if surplus unskilled labour or the struggling cultivators of uneconomic holdings were to resort to it, but it is undesirable if it leaves the most important industry entirely at the mercy of the uneducated and the less intelligent. The serious result of the migration of the educated, intelligent and enterprising from the rural areas to the towns is the loss of leadership that the former have to suffer. In the Western countries, although the same movement takes place,¹ the clergyman, the doctor and the schoolmaster have to a large extent supplied the necessary rural leadership, and have done much to encourage and help the agriculturists to improve their standards of production and living in various ways. In the delta these important elements have been lacking, and the comparatively low standards of production and living prevailing in the delta are undoubtedly due to a large extent to the absence of capable leaders.

CHAPTER VIII.

DEFECTS IN THE ECONOMIC ORGANISATION OF THE DELTA.

Non-Agricultural Classes and General.

Having examined the defects in the economic position of those classes, which obtain their livelihood direct from agriculture, attention may now be directed first to the other classes, and then to the community as a whole. The general position of these classes appears to be weak, on the whole. It has been mentioned before that among them wealth is much more unevenly distributed than among the agricultural population, and that, the fact, that the average income of the former per head is larger than that of the latter, is the result of the larger incomes enjoyed by the successful and prosperous members. But so far as the class of rent-receivers is concerned, it must be said that the economic condition of the majority of even the bigger landlords is not satisfactory. It is true that their income in the shape of rent, abwabs, etc., is large, but the majority of them are heavily indebted, and the number of those, whose solvency is beyond all doubt, is comparatively small. It cannot be said that their indebtedness is the result of their enjoyment of a standard of living which is beyond their income. In most cases, their houses are not showy, they do not spend much on pomp and display, and they live in the Indian style on indigenous products. Their indebtedness is mostly the result of mismanagement. Since the middle of the last century most of them have been absentee landlords living in Calcutta and other towns, and leaving the management of their estates to corrupt and inefficient agents, who have devoted their whole attention to filling their own pockets by means of all sorts of exactions

from the tenants, and who have taken no trouble to improve the estates and to increase the rents gradually and legitimately, who, in short, have entirely neglected the interests of their masters in every way. Secondly, a host of poor relations and hangers-on have always managed to gather round the landlords, who have had to maintain them in idleness. Finally, litigation, largely incited by these dependents, who have nothing else to do, has played no unimportant part in impoverishing many of the landlords. Few of the landlords have directed any attention to the proper management of their affairs. The thoughts of most of them about the management of their estates are centred in litigation. They are either proceeding against recalcitrant tenants, or are being sued by tenants who claim several privileges. Even if their own tenants are submissive, they get involved in lawsuits with neighbouring landlords and their tenants or with more or less distant relations, who claim some share or division of the property. This is a great tragedy of the economic life of the delta and a great obstacle to progress.¹ The operation of these factors has been so powerful and many of the estates are so heavily encumbered, that it is doubtful whether they will ever be able to regain their solvency. The really prosperous and solvent men are the more successful lawyers, traders and money-lenders and the higher Government officials.

The economic position of the petty landlords, whether proprietors, talukdars or tenure-holders, is far worse. Even at the time of the Permanent Settlement their number was large. But, for three or four generations after the Settlement was made, the income from these petty estates and tenures supplemented by the earnings of the few members of these families who took up service or some profession, sufficed for

¹ The waste involved in this litigation will be clear, if it is mentioned that the capitalised value of the annual expenditure on it will suffice to wipe off the whole mortgage debt of the delta, that the sum, if spent on education, will suffice to remove the illiteracy of the masses, and that if it is spent on medical relief, it will bring skilled medical aid within the reach of every village.

the maintenance of the families. However, in the course of time the increase of population has been far heavier than the increase in the rental, and further, by the law of inheritance and by subinfeudation, the rights in land have been more and more sub-divided so that the already petty income of each family has been further reduced.

Number of cultivators per rent-receiver.

Tippera ...	...	...	...	53
Bogra ...	...	...	...	51
Mymensingh	...	...	...	40
Noakhali	...	...	...	25
Bakarganj	...	...	...	24
Pabna ...	...	...	...	24
Dacca ...	...	...	...	21
Faridpur	...	...	...	14 ¹

On the other hand, not only has their standard of living gone up, but the general prices have also increased enormously. In spite of the operation of these adverse factors, the whole system has encouraged a life of idleness. Only a few members of such families have supplemented the petty income from the land by taking up service or the liberal professions, while the rest of the members have led a life of complete idleness. The economic distress resulting from this state of affairs can be easily imagined. During the last fifty years, with the heavy increase in the population as well as in the cost of living unaccompanied by a corresponding increase of income, and with the joint family system accompanied by a life of idleness firmly rooted in this class, the position has grown steadily worse and worse, until it has become acute now, and it will become still more so in the near future, unless remedial measures are soon adopted.

An increase in the income of the members of this class by increasing their rental cannot remedy the evil. It will merely postpone and aggravate it, and, in addition, will cause much harm to the actual cultivators of the soil. Any remedy calculated to increase their reliance on land will do more harm than good, because there is no land elsewhere, which supports such a dense population as is being supported by a large part of the delta. It is true that during the last few years this class has begun to realize the gravity of the situation, and that an increasing number of its members have been endeavouring to earn their living from other sources. But the most that they have been able to do is to become school masters, clerks in Government, District Board and other offices, doctors, chemists, zamindars' agents or lawyers. But these avenues of employment cannot afford much relief, because they are overcrowded, and as the economic condition also of those who are engaged in these occupations is distressful. Their standard of living too has gone up,—which would be a welcome feature if they were able to maintain it—but the cost of food, clothing, housing and travelling by palanquins or hackney carriages has gone up immensely during the last few years, making it very difficult for them to maintain the standard to which they have become used, and a lowering of the prevailing standard is always a difficult process involving considerable distress. Further, this class frequently gets into debt for the marriages and education of their children. It costs a Hindu clerk earning Rs. 40 or 50 per month between Rs. 400 and 500 to get a daughter married. Although every one can understand and appreciate his sacrifice in the interests of his daughter, it is not often realized that the social system which demands this sacrifice is responsible for considerable economic distress. Similarly, none can regard without admiration the love of parents, who deny themselves even many of the necessities of life, in order to be able to give their sons a higher education,

but it was hardly recognized until lately that this desire on their part to give a purely literary education to their sons a degree higher than they themselves had obtained it, was the main cause of the problem of unemployment of the educated and of the backwardness of the delta in commercial and industrial enterprises.¹ In short, the majority of the members of the Bhadrak class, which wields an importance and social influence in the delta out of all proportion to its numerical strength, are in considerable distress on account of the great difficulties that they are experiencing in maintaining the standard of life to which they have become used, and this economic distress is, to a great extent, responsible for the political discontent prevailing in the delta.

The dependence of a large section of the Bhadrak class upon the land has been rendered possible by a defect in the land tenure system of the delta, *viz.*, sub-infeudation, *i.e.*, the existence of a number of layers of intermediary or middlemen's rights in the land between the actual cultivator of the land at the bottom and the proprietor paying revenue to the Government at the top. It exists both extensively and intensively, *i.e.*, it prevails in a large number of estates in the delta, and, in addition, in a single such estate, the layers of intermediary interests may be as many as twenty. The owners of these interests, who are called tenure-holders and who belong mostly to the Bhadrak class, receive rent from the persons immediately below them in the ladder of tenures, and pay rent to those immediately above them, retaining a small share for themselves. The cultivators at the bottom usually pay rent to some petty tenure-holder, but frequently they have to pay a portion of the rent to each of a number of petty tenure-holders. The owners of the various tenures are generally

¹ The enormous waste resulting from this state of affairs does not yet seem to be fully recognized. Not only is the delta starved of men possessing efficient knowledge of commerce and industry, but also its agriculture, the source of greatest wealth, lacks skilled direction and is entirely in the hands of illiterate people.

not single persons, but groups of partners, who originally belonged to the same family, but among whom now purchasers also are frequently included. Most of the tenure-holders stay away from the villages in which their tenures are situated, and many of them possess a number of tenures in different estates. Once every year they go personally or send their agents to the villages to collect the rent, but in no other respect do they take any part in the life and affairs of the villages. A few of them do not even care to collect the rent due to them because the amount is very small, and their tenures merely serve to complicate the entries in the village books. However, in parts of the delta, there are some tenure-holders who live in their villages and cultivate their land. But these men generally cultivate only a part of the land, and sub-let the remainder. In some parts of the delta, especially in the south, many of the cultivators and tenure-holders cannot explain the title of their landlords or the ladder of tenures which connect them with the proprietors of the estates. These conditions of sub-infeudation exist more or less in most parts of the delta, but it is found in its most intricate and tortuous form in the district of Bakarganj.¹ In this district in an average area of 100 acres, 64 are occupied by the raiyats and under-raiyats, 9 by the proprietor, and 27 by intermediate tenure-holders, and of the 64 acres occupied by the raiyats, only 15 are held directly of the proprietor, and 49 are held of the intermediate tenure-holders, and in each estate there are usually eight, frequently twelve, and occasionally twenty grades of intermediate tenure-holders, the holders in each grade holding sub-leases of the land from those in the grade immediately higher in the scale, dividing their own tenancies in turn among a larger body of sub-lessees, and spreading out like a fan the interests in the land.

Sub-infeudation did prevail to some extent in the delta

¹ Cf. Bakarganj Report, pp. 43-59.

even before the Permanent Settlement. During the 18th century the native government continually pressed for more and more revenue from the land, and in order to meet these demands both the zamindars and the talukdars were forced to bring under cultivation the waste land contained in their estates. But, as it was troublesome to find colonists and to finance them, they obtained for this purpose the assistance of other men like themselves in return for the grant of tenures of the first grade in the land which was to be reclaimed. These men in their turn followed the same system of sub-letting, as they did not care to undertake personal supervision of the reclamation, but they usually granted sub-leases to men, who undertook to take colonies of cultivators to the wastes and to supervise their work. However, by far the greater part of the development of sub-infeudation has taken place since the Permanent Settlement. The causes operating to bring about this result must have been various in the various parts of the delta, and the intensity of their operation has varied in these parts, but they may be conveniently grouped into a number of classes, such as development, preservation, consolidation, promotion, revolt, interpolation, fraud and family arrangements. Of these, only the first four may be said to be legitimate.

In the class of development may be grouped all those intermediate tenures, which were granted in forest or waste land for bringing it under cultivation. This process has already been explained, and it continued after the great wave of 1822, when many cultivators were drowned or went away, and when much land was given up, making it difficult to settle fresh colonies of cultivators upon the land without creating intermediary tenures. To proceed to tenures arising out of preservation, during the turbulent years that followed the Permanent Settlement, many zamindars had to sell parts of their estates in order to preserve the remainder; if the sales were recognized by the Government, the purchasers became proprietors and paid the revenue direct to the

Government; but if the sales were not so recognized or were not brought to the cognizance of the Government at all, the purchasers became the holders of tenures-in-chief. With the same object, many permanent tenures were illegally created. All of them, however, were legalised by a regulation passed in 1812. As conditions became more settled, the necessity of this preservative process passed away, but it was later employed for a similar purpose, *viz.*, the simplification of the difficulties of management and control, in the case of complex estates or extensive but scattered and permanent tenures, thus causing a further increase of sub-infeudation.

With regard to consolidation, it may be explained that the management and control of scattered estates are very difficult, that the only solution of the problem is either to purchase, or to obtain permanent rights as tenure-holders in the intervening lands, and that whenever permanent tenure-holders of the first grade already exist, the creation of tenures of the second grade cannot be avoided. This method has been quite common in parts of Dacca and Faridpur districts. By promotion is meant the grant of a higher status to tenants already occupying the land. It is a peculiarity of Bakarganj and Noakhali districts. This form of tenure with rights of permanence, transfer, and fixity of rent was granted in some cases after the two great waves of 1822 and 1876, when many of the cultivators could be induced to stay on the land only by this offer, but its grant in return for cash payments became common towards the end of the last century. It was rendered possible, on the one hand, because the cultivators had become able to pay considerable sums for obtaining greater security of their title to the land, their financial condition having somewhat improved on account of the general rise in the price of agricultural produce, and on the other, because the landlords, and especially the petty ones, were in greater need of money, than before, on account of the rise in the cost of living, and saw that they could raise the wind for

some time, by creating these tenures and selling them for cash, without sacrificing much in return. The sacrifice was not considerable, because, although the cultivators had not theoretically possessed the rights of permanence, fixity of rent and transfer before the grant of this tenure, they had done so for all practical purposes ; for evictions had become difficult and infrequent, the petty landlords had lacked the power of compelling the cultivators to pay an enhanced rent, and mortgages and sales by the cultivators of the land occupied by them could not be prevented by the landlords except by expensive suits in the courts. The exaggerated idea, which the landlords had formed, of the rights granted to the cultivators by the Bengal Tenancy Act of 1885, also seems to have made the landlords eager to obtain money quickly by the grant of rights which, in their opinion, the cultivators could probably claim under the Tenancy Act as soon as they became aware of its advantages to them.

These methods, by which the extent of sub-infeudation has been increased in the delta, may be said to have been a more or less inevitable outcome of the land system established by the Permanent Settlement, but the same cannot be said of the remaining methods, which are merely excrescences upon the land system. Of these, revolt is a peculiarity of Bakarganj district, and all the varieties of tenure resulting from this cause are known by the comprehensive term jimba. Even after the establishment of the British rule, the peasantry continued to suffer much for several years at the hands of bands of pirates and robbers, and when these were broken up by the administration, many of their members took up the services of some landlords, who used them for oppressing the tenants of their neighbours or their own tenants. Those peasants, who were unable to obtain any protection from their landlords or were oppressed by them, revolted, and transferred their allegiance to other landlords who were able and willing to protect them. In this way many holdings were removed

from one estate to another, but more frequently they were removed from one tenure to another within the same estate. The landlords, whose protection was requested by the rebels, either made them tenants of their own estates or tenures, or pretended to hold subordinate tenures under the renounced landlords and incorporated the land of the rebels within them. The rebels, on the other hand, frequently made use of this opportunity to secure under-tenures from the new landlords, and to obtain better rights than they had possessed under the forsaken landlords. In later years the system was abused, and was often employed by unscrupulous landlords to increase their estates by harassing the tenants of weaker neighbours, until they transferred their allegiance, or by promising them under-tenures with fixed rent, as well as by unscrupulous tenants, who in reality could have no complaints against their landlords, but who desired to improve their position. The success of the jimba system was made possible by the absence of any state survey of the boundaries of estates and of facilities for the registration of documents. It was useless for the forsaken landlords to sue their tenants or rivals in the courts, because they could not prove their title; for, their documents were unregistered, and therefore as liable to be challenged as the false documents prepared by their rivals, and their tenants in a body would have denied any relationship to them at all; and further, even if the decision of the courts were to be in their favour, they lacked the means of enforcing the decree on account of the general weakness of administration, which has been mentioned before. Fresh creations of these tenures became difficult, when the Thak survey and the Registration Act made it possible for the renounced landlords to prove the boundaries of their estates and the contracts with their tenants, and became impossible when the complete record-of-rights was prepared.

Among the remaining methods by which sub-infeudation has been increased, fraud and family arrangements may be

regarded as variations of interpolation. In this class should be included all leases by which intermediate rights are established in land already occupied by tenureholders or raiyats, the lessors giving up to the lessees the collection of their rent. Such leases have been common in the separate lands of estates or tenures or in the detached tenures held by large landlords, as they meet the difficulties of collecting rent from distant tenants. More frequently, however, they cover the whole landed property of the lessors and are really assignments of all the rights of the lessors in the leased land. Custom regards such assignments as tenures, and the annual amount to be paid as rent, and so the courts allow it to be recovered as rent. These interpolated tenures are not restricted to large estates, but are equally common in small tenures, when they are generally the outcome of mortgages, and are substituted for sales. Whereas in other parts, the owners of land sell it altogether, in some parts of the delta they raise money by granting sub-leases and reserve for themselves a very small income, which, in most cases, is not paid to them at all. This is the result of the psychology of the people, who are always anxious to maintain at least a nominal connection with their ancestral property.

Many of the interpolated tenures, however, are created for fraudulent purposes. When indebted landlords realise the danger of their land passing into the hands of their creditors, they create undertenures by assigning the land to their relatives or servants, in whose names the rent-receipts, leases, complaints, etc., are thenceforth made, the management and real ownership of the land remaining in their hands as before. Then, the creditors on foreclosing find that all that they can obtain is a right to collect annually a very small amount from the holders of the undertenures who retain possession of the land, and that they must go through expensive and protracted litigation before the fraud can be uncovered. Such fraudulent tenures were sometimes created 10, 15 or even twenty years before the need for their use arose.

Assignments of land leading to interpolated tenures are also frequently made to suit family arrangements for the management of the land. Thus, when estates or tenures are inherited by women, children, or by men who are permanently occupied far away from the land, they grant permanent sub-leases to some male relatives, who undertake the management of the land and the collection of rent. In these cases, undertenures are interpolated between the tenures of the assignors and the tenancies of the tenants holding under them.

These are then the forces, which have brought about a considerable amount of sub-infeudation in the land system of the delta, making it possible for a large number of the members of the Bhadrakalok class to depend upon the land, and to obtain in the majority of cases no more than a precarious living from it. It is true that sub-infeudation need not cause complexity and confusion, if its development is regular and orderly, if the grants are compact and cut up into compact blocks, and if the various grades of tenures are created in a regular progression. But such has not been the case in the delta, and sub-infeudation is responsible for much complexity and confusion in its land system. Moreover, these have been increased by the operation of two causes, which have been strengthened by the existence of sub-infeudation, *viz.*, the freedom with which tenures have been bought and sold and the system of coparcenary, which has led to the introduction of the aliquot tenure. In recent times tenures have been bought and sold as freely as if they were the shares of an industrial or commercial concern, and the purchasers have very frequently known nothing about the land of their tenures beyond the amount of rent due to them, as they have lived at a distance from it and at most paid it a short visit once a year. The other cause of confusion has arisen out of the break-up of the joint family system in recent times. In spite of the law of inheritance laying down the division of

property among a number of heirs of deceased persons, the land system was prevented from growing very complex by joint management in joint-families. But although the joint-family system is now breaking up, no facilities have been provided for a cheap and quick partition of land. The Partition Act holds good only in the cases of proprietors of estates paying revenue to Government, and for the partition of tenures, the only way is to have recourse to the courts, with their delay and uncertainty. Peaceful partitions among the members have, in most cases, been impossible on account of mutual jealousies. The consequence has been that even if no partition has been made, each partner has frequently begun to obtain as well as to pay his own share of the rent, and thus separate management, but without partition, has taken the place of joint management. Thus a new type of tenure has been created in large numbers, and as its holder has been able to create undertenures by means of assignments without reference to his partners, these under-tenures also have tended to increase enormously. The aliquot tenure has rendered the land system far more complex, because its holder regards it as an independent tenure in every respect, selling and subletting it as he likes independently of his partners in the undivided property, yet he cannot claim any particular portion of the property, as solely his own, but can claim only an undivided share in the whole of it. This system has adversely affected the interests of the cultivator also, because whereas before he paid his rent in one sum and obtained one receipt, he has now to pay it in several sums to several persons and to obtain a number of rent-receipts, which makes his title to his land much more complicated. Some of the cultivators in the south of the delta have followed in the footsteps of their landlords, and although they cultivate their land jointly, with their partners, they obtain their share of the harvest and pay their share of the rent separately from them. In this part, therefore, the aliquot system has taken

the hold of all the rights in the land, from those of the zamindars down to those of the raiyats.¹

Such has been the complex growth of sub-infeudation, and it remains to consider its economic results. In the first place, it is claimed that in some parts of the delta it has enabled large areas of waste land to be brought under cultivation. This is true, but the same result could have been achieved much more rapidly and effectively by immigration assisted by the state or by colonies of cultivators planted by the state, and at the same time the complexity existing at present in the land system would have been avoided. Secondly, it is maintained that sub-infeudation has enabled the division of the profits of landowning among a large number, and the growth of a large class of annuitants, who have given their sons a higher education and so provided recruits for the professions and administration. It is claimed that instead of allowing the profits to accumulate in the hands of a few rich landlords, who would have done no useful work, it has given a large number of men enough to live on but not enough to destroy the spirit of enterprise. It is true that the recruits for the professions, civil services and clerical establishments have been so far supplied almost entirely by this class, and that a rather wide distribution of the profits of land-owning has rendered this possible. But this development has been accompanied by a great economic waste. Throughout the delta there is a large number of men among the Bhadrak class, who manage to live upon the profits of their tenures, spending their whole time in entire idleness, and performing no useful work for society. The cancer of idleness has grown deep in the body economic of this class, and although the standard of living of many of its members is in imminent danger of being lowered on account of the gradual reduction

¹ The Survey and Settlement Reports for the various districts have been found very useful in the above examination of the tangled growth of sub-infeudation.

of their profit from the tenures brought about by subdivision, they do not like to take up any regular work, unless they are compelled to do so by actual want. Thirdly, it is urged that sub-infeudation has helped to strengthen the position of many cultivators against their landlords, enabling them to enjoy fixity of tenure and reasonable rents, because small tenure-holders, and especially those who stay away from their villages, lack the power to oppress their tenants. There is some truth in this view also, but it should be borne in mind that in those parts of the delta, which have contained large areas of fertile waste in alluvial chars, marshes or forests, the position of the cultivators, apart from sub-infeudation, has not been weak, because, as the waste areas have been brought under cultivation, the profits of the landlords have grown without any necessity of oppressing the cultivators, and because harsh treatment involved the danger of desertion on the part of the cultivators. In any case, it appears that, whatever were the advantages of sub-infeudation in the past, are now outweighed by its evils. The Settlement Officer for Bakarganj does not overstate the evils when he says, "It is now a fertile cause of fraud and confusion, it makes civil justice dilatory and inefficient, it gives endless opportunities to the landshark and intriguer, whose efforts poison the peacefulness of village life, it hampers the ordinary administration at every turn and makes tedious and difficult the simplest duties of revenue and routine."¹ Of course, the evils are at their worst in the district of Bakarganj, where the growth of sub-infeudation has been far more tortuous than in any other district, but the other districts are not free from them, although they suffer from them to a much less extent. It is not merely the landlords or the middlemen who suffer, but the cultivators also are in the same position. They are frequently the victims of clever persons, hungering for

¹ Bakarganj Report, p. 59.

land and unscrupulous enough to pervert this intricate system to their own advantage, and they are often forced by these men into disputes, out of which they emerge as losers. Separate collection of rent by the several partners in a tenure is especially responsible for considerable vexation to the cultivators.

But the gravest defect in the economic organization of the delta appears to be the heavy pressure of population on the means of subsistence, although this pressure is somewhat less heavy in the delta than in the neighbouring Provinces of Agra and Oudh and Bihar and Orissa. It is true that, as explained before, the density of population per square mile is much greater in the former than in the latter, but its pressure on the means of subsistence is less heavy in the former than in the latter, on account of the greater productivity of agriculture in the former. The determining density factors in India are yet different from those in Western countries, where the progress achieved in industrial and commercial development largely determines the growth and density of population.¹ Thus in England, next to London and its suburbs, the densest population is found in Lancashire with its textile mills and Durham with its coal mines. The density in these two counties is more than five times that in pastoral and agricultural counties such as Oxfordshire, Lincolnshire, Norfolk and Devonshire, in which the density is not greater than 200 persons per square mile. But in India, where two-thirds of the population directly depends on agriculture as compared with less than 7 per cent. in England, trade and industry influence density to a small extent when large areas are considered, and even the number of districts, whose density is considerably increased by the existence of commercial and manufacturing towns in them, is small. Moreover, in India the variations in the productiveness of land are far

¹ Cf. the Report on the Census of India, 1911, Vol. I, Part I, p. 25.

greater than in Europe. Therefore, although Trunnier deprecates the tendency to regard density as dependent solely on the cultivated area, there can be no doubt that it is determined in India by factors such as rainfall, irrigation, configuration of surface, fertility of soil and cultivated area, which go to make up the productiveness of agriculture, and that the extent of the pressure of population on the means of subsistence is to be measured by comparing density with this productiveness. Thus, in the United Provinces the soil is dry, the rainfall is scanty and badly distributed, almost the whole of the cultivable area has been brought under cultivation, the holdings of the cultivators are very small, 9·5 per cent. of the population consists of landless labourers, who find it very difficult to obtain any employment during several months of the year, there is no industrial centre with the exception of Cawnpore, and the general standard of living is very low. Similar conditions exist in Bihar and Orissa, in which the percentage of landless labourers to the total population is even larger, being nearly 20 per cent. and in which the coal and iron industries fail to give them sufficient employment during the slack agricultural season.

In the delta, however, the factors influencing agricultural productiveness are, as seen before, more favourable. The amount of water obtained for cultivation from river floods and rainfall is generally neither excessive nor insufficient and is well distributed. These conditions are essential to successful cultivation, and it is a mistake to suppose that the greater the amount of water available, the better the agriculture and the greater the density of population, because an additional quantity of water beyond a certain point, far from being beneficial, may prove injurious. Thus by far the heaviest rainfall takes place in Lower Burma and Assam, and yet population is the least dense in these parts. When a sufficient amount of water, and no more, is available, the next important factor is the configuration of the surface. In this matter

also, as seen before, conditions in the delta are on the whole very favourable to the productiveness of agriculture. Most of the land of the delta is a level plain, and so water can be retained on it by means of small ridges and made to supply the moisture which is so essential in a tropical country during the intervals of dry weather, no erosion can take place, and the permanent cultivation of all such land is practicable. In this respect, however, conditions in a large part of the United Provinces and Bihar are equally favourable. Although in India there are great differences in the qualities of different soils, and although the outturn of crops must vary accordingly, even if other conditions are the same, the paramount considerations are water and the configuration of the surface, and the nature of the soil is a less important factor. However, in this respect also the delta is in a very favourable position, because the soil, annually enriched by fresh deposits of silt brought down by the river floods, is the most fertile in India, and this combined with the other two factors makes agriculture more productive in the delta than in any other part of India, which is not artificially irrigated by means of canals. The valley of the Indus is also an alluvial formation but it is one of the most sparsely populated tracts in India on account of the great shortage of water. The soil of Sind is plastic clay deposited by the Indus, and with water would develop into a rich mould, but for lack of water, it degenerates into a desert.

Other factors affecting the density of population are climate and past history. Assam, for instance, is capable of supporting a larger population, but many parts of the province are extremely malarious, and this is one of the main reasons for its sparse population. The pressure of population would have been even heavier in the United Provinces and Bihar than it is now had it not been for the fact that parts of them have suffered much from the ravages of malaria and plague. Most of the delta, which is being considered, has, however suffered much less from malaria, and plague has been practically

unknown in it. Again, the delta was one of the tracts, earliest to be brought under the British rule and to enjoy peace and good government. One of the chief reasons for the low density of population in Burma is its past history. Before its more recent annexation it had suffered for a long time from civil warfare and misrule, on account of which its population became depleted. Since the establishment of peace and stable government, its population has been growing rapidly. Similar conditions existed in Assam, but that province has had more time in which to recover from the devastation that was caused by the raids of the Moamarias and Burmese before the establishment of the British rule.

Although the pressure of population on the means of subsistence is thus a little less in the delta than in the United Provinces and Bihar and Orissa, there can be no doubt that it is heavy enough seriously to weaken the whole economic position of the delta. With regard to Germany, Trunnier laid down the dictum that agriculture alone could not support more than 250 persons per square mile,¹ and this is true not merely of Germany, but of all the advanced Western countries. But agriculture in the delta has to support from three to four times this number per square mile, because it has been mentioned before, that in the different districts the density per square mile varies from 725 to over 1000, and that most of this population is dependent directly or indirectly upon agriculture. Moreover, the delta has to support not merely the natural increase in its population, but also the excess of the immigrant over the emigrant population, which although small has shown a tendency to increase in recent years. The people of the delta are more stay-at-home than those of the U. P. and Bihar and Orissa, because their economic condition is a little better, and the only emigration that may be noted is that to Assam and Burma, and even that is on a small scale, because, as will

¹ Beiträge zum Problem der Volksdichte.

be seen later, the conditions for immigration in the latter two provinces are not at all favourable. On the other hand, immigration into the delta from the U. P. and Bihar and Orissa where the pressure of population is heavier and its economic condition somewhat worse, takes place on a larger scale, amounting to nearly $\frac{1}{2}$ million during each of the decades 1901-11 and 1911-21. Moreover, while this immigration helps to increase the pressure in the delta, in the other two provinces, it only arrests for a while without destroying, the intensity of the population problem. The up-country immigrants, in most cases, leave their families behind, retain all their old connections, and send remittances as frequently as possible. Far from improving their own standard of living, they stint themselves in order to send the remittances to pay off the money-lenders and to redeem the mortgages on their family lands, and to maintain the unemployed members of their joint families.¹

The explanation of the fact, that agriculture in the delta supports per square mile from three to four times the number of persons in the Western countries, is to be sought not in any greater productiveness of it, but in the lowness of the standard of living that carries at least three persons through on a real income which would be just enough to maintain one person in the Western countries. It has been explained before that the standard of living in the delta, although it is somewhat higher than that in the other tracts of India which are not artificially irrigated by canals, is not much above the mere subsistence level, and that it is low as compared with that in the advanced Western countries. The standard of living of agricultural population in the Western countries has been adjusted to a density of not more than 250 persons per square mile. The surplus population has been drawn off into industrial and commercial pursuits and the standard of

¹ Cf. Wattal, *Population Problem in India*, p. 36.

living of the agricultural population has been not only maintained but considerably improved. In the delta, as in India, a stage has not yet been reached at which such pursuits draw off even a small portion of the labour which is really not required for agriculture. As seen before, a stage has been reached in which the land available for cultivation is insufficient to keep fully occupied a large number who see no occupation except agriculture which they can take up. The next stage may take a considerable time to be reached, as a large proportion of those who turn their hands to agriculture own considerable rights in the small plots they cultivate and will be reluctant to abandon them when the time comes to give up agriculture for other occupations. In the Western countries the increase in the number engaged in agriculture is limited by the maintenance of the prevailing standard of living, but in the delta, as in India, this position has not yet been reached.¹

It is a generally recognised economic law, that, when the standard of living of a community is low, practically at the subsistence level, it is difficult to raise it, and that if the wealth of such a community increases, its effect is felt more generally in a more rapid increase in its numbers, by the removal or reduction of the action of the positive checks of starvation and disease, than in an appreciable improvement in its standard of living. This is what has happened in the delta. It has been explained before that not only have the agricultural resources of the delta increased in recent years, but that also their value to the people has increased substantially, as, with the expansion of India's trade relations with other countries, the world markets have been gradually thrown open to the products of the delta, especially jute, for which the effective world demand has gradually increased. The effect of this increase has been only slightly

¹ Cf. Bengal Census Report, 1921, p. 19.

felt in a general improvement of the standard of living, and most of it has gone to support a more rapid expansion of the population, as there has been no conscious desire and no effort on the part of the people, who are used to a low standard of living, to improve it. The result is that the pressure of population on the means of subsistence is very heavy in the delta. In some countries a rapid growth of population may seem to some a desirable object of statesmanship; and it is true that there have been periods in the history of some countries when an expansion of population appeared to them a matter of the highest importance, on account of dangers of invasion by foreign powers. But even in these cases a comparatively small population with a high standard of living could have defended its country from foreign aggression more efficiently than a vast population living merely at the subsistence level. Moreover, the Bengal delta has no such fears, and a further rapid increase of its population is undesirable.

It has been held that there is no pressure of population in the delta, and the reason given has been the general complaint about the insufficiency of the existing agricultural as well as industrial labour supply in the delta itself and in the surrounding regions.¹ It is pointed out that the cultivators complain that they cannot obtain sufficient labour at suitable wages to reap the harvest and to assist in other agricultural operations, that even some official reports admit that the cultivators are placed in a helpless position by labourers, who can now dictate their own terms, that the managers of tea estates in Assam complain that they are handicapped by the lack of sufficient labour, which prevents any large extension of their operations, and that managers of mills and factories say the same with reference to industrial labour. The conclusion would therefore seem to be that, far

¹ Cf. for instance, Sir Herbert Risley's view in the Report on the Census of 1901. Cf. also W. W. Hunter, *British Empire*, pp. 85 ff

from there being any pressure of population and any reason for anxiety on account of its rapid growth, such a rapid increase should be welcomed as essential to the development of resources which remain unused on account of a lack of men to work them. It is therefore necessary to examine whether this alleged scarcity of labour is real. As regards agricultural labour, the facts brought out by the Census of 1911 that the percentage of population supported by agriculture is increasing, that the percentage of agricultural labourers is increasing faster, and that the cultivated area per unit of the population is diminishing are opposed to the above conclusion. The basis of the cry in respect of agricultural labour seems to be a failure on the part of the employers of it to realise that the cost of living has been steadily increasing since 1905, that what was a living wage then could not be so later, even before the War, and that in order to obtain sufficient labour they must be prepared to give a fair day's wage for a fair day's work according to the state of prevailing prices. They still expect to obtain sufficient labour on the old terms and conditions, and when they fail to do so, they raise the cry that it has become scarce. They can afford to pay higher wages, because their profits have increased substantially in recent years on account of the rise of prices, and because agricultural profits are far less threatened than industrial profits by Western competition. The tendency for wages to lag behind prices is noticeable in all countries, but it is far more marked in the delta as in India generally than in the Western countries.¹ Hence, unless fair wages can be secured, the surplus agricultural population of congested areas in the delta prefers keeping body and soul together somehow near at home by doing miscellaneous work to moving to less densely populated but more or less distant areas, where labour is more needed.

¹ Cf. Wattal, *Population Problem in India*, pp. 74-5. and *Prices and Wages in India*.

Similarly, the shortage of labour of the tea-estates of Assam is largely a question of wages. It is notorious that, while the dividends paid to the shareholders have been large in most years, the wages paid to the labourers were low even before the commencement of the rise of prices in 1905, and that their subsequent increase has been much less than the rise of prices. It is true that the tea planters bear the expenses of housing the labourers, of giving them medical treatment, of providing them with dhankhets, etc., but the labourers feel that their masters are actuated by ulterior motives in providing these benefits, and that they would be much better off, if the cash value of these benefits were to be given to them, in the shape of an increase of wages. Moreover, the conditions of employment and work on the tea-estates are much harder than in other agricultural pursuits. The very facts that recruiting agents have to be engaged and that penal conditions have to be imposed show that the tea industry under present conditions does not offer advantages large enough to attract sufficient labour from the delta or any other congested part of India. It is true that the planters have to spend large sums on the recruiting agency, but this expense does not improve the position of the coolies.

With regard to the alleged scarcity of industrial labour also, the wages factor must be taken into account. Wages have increased, but they have remained behind the march of prices, and moreover, as the standard of requisite skill has risen appreciably, it is not fair to compare the higher wages of the present with the somewhat lower ones of the past. It has been argued that on account of the competition of the Western countries employers find it very difficult to pay higher wages unless the efficiency of labour also increases, but it should be remembered that in normal times many of the employers have been earning at least 20 per cent. profits on their capital and can afford to pay away a part of them in higher wages, which would attract more labour and thus enable them to expand

their business and to obtain larger profits after some time. Further, although industrial labour in India is still much less efficient than that in the Western countries, experienced managers admit that its efficiency has improved recently, and that higher wages have made the coolies stronger and more self-respecting and their employers more exacting.¹

Moreover, as regards industrial labour, other factors besides wages must be taken into account. It is true that such labour is largely in demand by Government departments for the construction of railways, irrigation works and public buildings, but that frequently a sufficient supply of labour is not forthcoming to meet this demand. The reasons for this deficiency are that such employment is temporary, that it generally requires some kind of skill which the untrained labourer does not possess, and that it is generally available in places more or less distant from densely populated localities. Mills, factories and workshops in and near Calcutta and in other towns offer regular and permanent employment and definite hours of work and wages. But the conditions of life in towns do not suit the cultivators. They are housed worse in towns than in villages, they are liable to diseases unknown in their villages, and feel isolated and lonely in the midst of a heterogeneous mass of people with different languages, customs and ways of living, especially as they leave their families behind in their village homes. Further, although they earn more in towns, they have to spend more also, firstly, on account of the higher cost of living in towns, secondly, for refreshments and amusements which slightly make amends for the harder and more monotonous work that they have to do in towns, and thirdly, on account of the double establishment that they have to maintain for themselves in town and for their families in villages. Thus, although they get more

¹ This was pointed out even before the War, by the Decennial Moral and Material Progress Report of 1918, see pp. 401-2

money wages in towns, they are really not much better off. Consequently, the cultivators are reluctant to leave their villages to take up work in towns, and even if they are prepared to do so, they are most reluctant to go beyond a certain distance from their homes, and even those who take up work in towns have their eyes always turned towards their village homes, to which they return as soon as they are able to save a little. The conclusion then is that so long as the employers of both agricultural and industrial labour in the delta and surrounding regions do not realise that the old days of low prices and very cheap labour have gone for ever, and that in order to obtain and keep labourers they must pay them fair wages and treat them with greater consideration, and so long as the other difficulties mentioned above are not removed or at least considerably mitigated, the cry regarding the scarcity of labour would persist, but that it cannot be regarded as a proof or even an indication of the lightness of the pressure of population on the means of subsistence in the delta.¹

Not only is the population very dense in the delta, but, as explained before, also the density is continuously and rapidly increasing. It is therefore necessary to examine more closely the main features of this increase. It is found that fecundity is greater among the Mohammedans than among the Hindus of the delta. During the decades 1901-1911 and 1911-21, the former increased by 14·6 and 9·9 per cent. and the latter by 6·6 and 4·6 per cent. Again, during the forty years 1881-1921 the former increased by 67·3 per cent. and the latter by 30·9 per cent. It is true that the faith of Islam, being a proselytizing one, obtains accession to its ranks by means of conversions from other religions, but this factor accounts for the superiority of the proportion of the growth of the Mohammedans only in a slight degree, and almost the

¹ Cf. Wattal, *Population Problem in India*, pp. 70-80.

whole of the growth is the result of a natural increase.¹ The above figures are notable in view of the facts that the foreign element among the Mohammedans of the delta is very small and that the physical conditions under which they live are identical with those of the Hindus. The superiority of the fecundity of the former seems to be the result of the operation of several forces. In the first place, early marriage and early cohabitation, which have the effect of debilitating the female body prematurely and of reducing its power of bearing children, are somewhat less common among the Mohammedans than among the Hindus. This is shown by the fact that according to the Censuses of 1911 and 1921, in Bengal, out of every 100 Mohammedan females between the ages of 10 and 15 only 56 and 50 were married, whereas the proportion for Hindu females was as high as 67 and 62.² Consequently, the disparity between the ages of husband and wife is less among the Mohammedans than among the Hindus, and this helps fecundity. Secondly, widow remarriage is more common among the former than among the latter. * Although it is somewhat looked down upon by the former on account of their contact with the Hindus, their religious custom does not prohibit it, as that of the Hindus does in the case of the higher castes. This again is brought out by the fact that according to the Census of 1911 in Bengal for each 100 women of the reproductive age of 15-40, among the Mohammedans the numbers of unmarried, married or remarried with their husbands living, and widowed women were 2, 87 and 11 respectively, whereas among the Hindus in the same categories, the numbers were 2, 76 and 22. According to the Census of 1921 the numbers were 4, 86 and 10 among the Mohammedans and 3, 80 and 17 among the Hindus. Thirdly, among the Mohammedans there are no caste restrictions and no hypergamy.

¹ Cf. Bengal Census Report, 1911, p. 203.

² Bengal Census Reports, 1911, p. 204, and 1921, p. 269.

Caste restrictions are universal among the Hindus, while hypergamy is found to prevail among the Brahmans, and their example has been followed not only by other higher castes such as the Kayasthas, but also by some of lower rank. When a caste is divided into several sections of different status, frequently resulting from different origins, in some cases parents must marry their daughters into an equal or higher section, and, if they do not do so, are themselves reduced to the status of the section into which their daughters are married. The men may marry girls of an inferior section, but the girls must marry only in their own or a higher one. The marriage of a daughter to a man of a higher section is considered very desirable, and such men therefore are in great demand as bridegrooms. Consequently, parents belonging to the higher sections of a caste frequently find it extremely difficult to secure husbands for their daughters.¹ Fourthly, the somewhat more nutritious diet of the Mohammedans, who eat meat and eggs more frequently than the Hindus, may also promote fecundity.

Lastly, there is the demographic aspect of the problem. According to Spencer, organisms multiply in an inverse ratio to the dignity and worth of individual life, *i.e.*, in all living beings the powers of reproduction are in an inverse ratio to those of individual preservation.² Thus, whereas in the lowest plants and animals there is a large number of seeds and eggs, in the higher they are few. The reproductive powers of the elephant and man are the lowest because they have the highest power of self-preservation. He says, "Every generative product is a deduction from parental life, and to diminish life is to diminish the ability to preserve life. The portion thrown off is organised matter; vital force has been expended in the organisation of it; which vital force, had no such portion been

¹ Cf. Census of India, 1911, Vol. I, Part I, pp. 254-5.

² Principles of Biology, Vol. II, Chaps. XII and XIII; cf. also Wattal, pp. 15-16,

made and thrown off, would have been available for the preservation of the parent. Neither of these forces, therefore, can increase except at the expense of the other; in other words individuation and reproduction are antagonistic." In applying this reasoning to the Mohammedans, it is found that in the delta intellectually they are less advanced than the Hindus, and the reports of the Education Department prove this.

The most prominent feature of the population problem in the delta is the universality of marriage both among the Mohammedans and Hindus, which does not exist in the Western countries. Thus, while in England at the age of 25, 76 per cent. of the girls and 86 per cent. of the boys are unmarried, in the delta the percentages are 2 and 39. For the Hindus, of both sexes, marriage is a religious necessity, which must be carried out without any consideration of the fitness of the parties to bear the responsibilities of married life. Among the Mohammedans, marriage is equally universal, although it is not enforced by religion, partly on account of contact with the Hindus, and partly on account of the general conditions of life in a comparatively unorganised society, in which marriage is a necessity to both man and woman. A man must have a wife to cook for him, to manage his house and to help him in his work; as to woman, marriage as affording protection, is the aim of her existence.¹ It is true that recently a tendency for the postponement of marriage among young girls in the delta has become very marked. In the age group 10-15 there were 459 per mille unmarried in 1921 as against 377 in 1911. There is a marked tendency to postpone marriage among girls to the age of puberty as well as at the earlier productive ages, resulting from the spread of education and reaction to economic circumstances. Nevertheless it is still true that marriage in the delta is well nigh universal.

¹ Cf. Westermarck, *History of Human Marriage*, p. 136.

The universality of marriage, however, is somewhat complicated by the uncertain significance attaching to marriage. In the delta it implies three stages: the civil marriage known as nikah, shadi or biyah; the home-coming of the bride to the bridegroom known as rukhsat, vida or mukhlawa; and the actual consummation of the marriage. It is the last alone that is important from the point of view of a study of population. The social obligation to marriage in the delta, especially in the case of the girl, is so strong that marriage is postponed beyond the age of puberty with the greatest reluctance. But the obligation is only for the civil marriage and its consummation may be postponed. There are certain ceremonial rules governing cohabitation, which, if strictly observed, produce some effect of this kind. But detailed enquiries go to show that in the vast majority of marriages, especially among the labouring classes, the consummation takes place at the time of puberty.¹

The effect of the universality of marriage upon the birth-rate in the delta is neutralised to some extent by the operation of three factors. In the first place, the practice of cohabitation at, or soon after, puberty reduces the child-bearing capacity of women, by the injuries which it causes, or by the disease which it produces. The operation of this factor, however, will decline progressively in the near future as the practice of very early marriage will gradually give way to higher conceptions of right conduct. Secondly, the practice among women of suckling their children at least for two years not only reduces their fertility, but is also accompanied by abstention from cohabitation to a greater or smaller extent during lactation. Thirdly, certain ceremonial rules governing cohabitation tend to produce a similar effect. Dr. Bentley, the Director of Public Health in Bengal, in his annual report for 1921 has discussed the adverse effects of extreme poverty

¹ Cf. Prof. C. J. Hamilton's paper on the Population Problem in India, read at the Bombay Economic Conference, 1924.

and malaria upon the birth-rate, but these two factors are not important in the delta as there is not much extreme poverty in the delta and as most of it is comparatively free from the ravages of malaria. The net result of all these factors is that the average annual birth rate per 1,000 living persons is higher in the delta than even in India as a whole and much higher than in most advanced countries of the world. This fact is brought out by the following figures.

			<i>Birth-rate.</i>		<i>Death-rate.</i>
Bengal Delta	...	...	40	...	30
India	...	...	38·58	...	34·2
Ceylon	...	...	38·12	...	29·5
Chili	...	...	38·07	...	30·46
Hungary	...	..	36·80	...	25·68
Germany	...	..	32·31	...	18·39
Japan	...	...	32·85	...	20·86
Scotland	...	...	27·99	...	16·33
England and Wales	...	...	26·8	...	15·15
New Zealand	...	...	26·79	...	9·76
Australia	...	...	26·52	...	11·11
Sweden	...	...	26·17	...	14·68
Ireland	...	...	23·3	...	17·28
France	...	...	20·25	...	17·32

These figures also show that, if the birth-rate is much higher in the delta than in the advanced countries, the death-rate is also much higher, although a little lower than in India as a whole. Some of the deaths that occur can be prevented, and those who are endeavouring to do so deserve all honour and respect, but the delta is bearing the unavoidable punishment for allowing procreation to go on without substantial checks and bringing to life more persons than it can properly provide for. With a birth-rate as high as 40 per 1,000 living persons, the population of the delta would have found it very difficult even to live, if the death-rate had come down to the

level of that in the advanced countries. The high death-rate is therefore a result of the high birth-rate, and the only way to reduce the former to the level obtaining in the other countries is to reduce the latter to a similar level. This becomes more clear from an examination of the higher infant mortality, higher female mortality at the reproductive ages and smaller average longevity in the delta than in the other countries. The following figures show the position in respect of infant mortality.

<i>Countries.</i>	<i>Deaths of children under one year per 1,000 births.</i>		
New Zealand	64·3
Sweden	84·4
Australia	87·5
Ireland	96·1
Scotland	116·1
England and Wales	127·7
France	132·4
Japan	159·8
Ceylon	180·2
Germany	186·6
Hungary	207·6
Russia European	260·5
Bengal	270

There are several causes of the higher infant mortality in the delta. In the first place, it is due to unskilful midwifery and disregard of rules of cleanliness and hygiene. The lying-in-rooms are generally dark, damp and badly ventilated outhouses, the instruments employed are dirty and primitive, and antiseptic dressings are rarely used. Considerable improvement in this respect is practicable and may be expected. Secondly, the mortality is due to the exposure caused by insufficient clothing, the absence of facilities for the proper treatment of infantile diseases, the failure of the nursing

powers of mothers owing to the lack of nourishing food, and the use of unsuitable substitutes for the mother's milk. Thirdly, among the poorer classes many of the mothers are poorly fed women, who continue to work to the very end of their pregnancy, and consequently give birth to weakly and sometimes premature infants, who succumb soon after seeing the light of this world. This set of causes is thus the result of poverty, and will gradually disappear along with an improvement in the general standard of living and the economic condition of the people. But even if all these causes are removed, infant mortality will continue to be higher in the delta than in most of the other countries, so long as in the former early marriages remain the rule, and so long as everybody marries, whether fit or not, and becomes a parent at the earliest age allowed by nature. For, a considerable proportion of the infant mortality is due to premature births or debility from birth resulting from early marriage.¹

The causes of the high female mortality at the reproductive ages are the same, *viz.*, early marriage, insanitary surroundings at confinement and unskilful midwifery, which result in phthisis or some other disease of the respiratory organs, or some ovarian complication, and untimely death. This is shown by the fact that in Bengal, whereas the average number of female deaths per 1000 male deaths between the ages of 5-15 is 749, it is as high as 1,193 between the ages of 15-30. In this matter, of all the provinces of India, Bengal, where early marriage is the most common, stands at the bottom of the list, while Burma, where it does not prevail, stands at the top, the corresponding figures for this province being 858 and 862.

With regard to longevity, it should be remembered that it is adversely affected by fecundity, because as Spencer has

¹ The Sanitary Commissioner of Bengal expresses the same opinion in several of his reports.

pointed out, every generative product is a deduction from parental life. Thus it is found that in the delta the proportion of males aged 60 and over per 100 males aged 15-40 is 12 among the Hindus and 11 among the Mahomedans, and that the similar proportions for females are 13 and 6 respectively. Even among the Hindus, it is found that the proportion of old males is higher and that of old females much more so, in the higher than in the lower castes, which are more prolific. What is true of these communities is also true of the delta as a whole, with its high birth-rate. If this rate is high, the average expectation of life is bound to be lowered, because each generation is sent away from this world prematurely in order to make room for the next. Thus the average expectation of life for males as well as females is far lower at birth and every succeeding decade of life, in the delta than in England. This may not cause astonishment as it is generally understood that the vitality of the English people is much greater. But it is surprising that the longevity of males and females is appreciably lower in the delta than even in the other parts of India. Attention may, however, be drawn again to the fact mentioned before that the birth-rate also is higher in the delta than in the other parts of the country. Again, it is striking that, while the expectation of life, both for males and females shows a tendency towards an increase in England, in the delta it shows an unmistakable tendency towards decline since 1881. This latter tendency is, however, noticeable in other parts of India also.¹ These facts involve consequences of the highest importance to the delta. They show that the people, who are fitted for leadership in the several public activities by reason of their knowledge, experience and ripe judgment, are untimely removed by the hands of death, and that therefore this leadership, which in the Western countries is taken up by

¹ These facts are brought out by the tables given in the Report of the Census of India, 1911, Vol. I, Part I, pp. 168-9.

such men, falls in the delta into the hands of younger and therefore less experienced and less reliable persons.¹

The figures for the birth-rate and death-rate given before show that the rate of natural increase of population, *i.e.*, the excess of the birth-rate over the death-rate, is much less in India than in other countries, such as England and Wales, Scotland and Japan. But the same table shows that the rate of natural increase in the Bengal delta is nearly the same as that in these three countries. In fact, of all the large natural divisions of India, the rate is the highest in the delta. This means that a continuous and rapid increase of population is yet an active living force in the delta, which involves the danger that any increase in the wealth of the delta in the near future, that may result from more intensive cultivation and the development of trade and industries, may be followed by a further increase of population instead of by a general improvement in the standard of living. Another danger is that this standard, far from improving, may be depressed by adverse economic forces. It is true that, if the standard of living of a class of workers improves, and if the improvement becomes firmly rooted in the habits of that class, it will resist any lowering of the standard by all the means within its powers. Its members will tend to transfer their services to other industries, or they will introduce a better organization or adopt a powerful trade-union combination. In one way or another they will keep up their earnings to the level, which may be necessary for the maintenance of the standard of living to which they are habituated. But, if the improved standard of living is not firmly rooted in their habits, they will not struggle strenuously against adverse economic forces tending to lower it back to the former level. In the delta, the improvement that has taken place in the general standard of living, has not yet become firmly rooted in the habits of the people; at the same

¹ Cf. Wattal, *The Population Problem in India*, p. 19.

time the growth of population is proceeding apace; and the standard of living may become easily depressed to its former level, without any appreciable struggle on the part of the people, if their earnings are reduced on account of a discontinuance or a reduction of the world demand for some of their products, that may result from trade depression or the discovery of cheaper substitutes.

Finally, the comparison between the standards of living of the mass of cultivators in the delta and in North Italy, that has been attempted in a previous chapter, brings out the great weakness and neglect of local administration in the former. Most of the conveniences and comforts of life, which are lacking in the delta, and which make the general standard higher in North Italy, are provided by the local administration and not by the central government. The case is not different in other Western countries, and the people of the delta lack these advantages, because they have not been provided by the local administration. The District Boards in the delta have on the average an annual income of only three and a half annas per head of population, of which slightly over two annas are obtained by taxation in the form of the road and public works cess levied at the maximum rate permitted by law of one anna in the rupee on the gross rental of land, and the remainder of which is derived from grants made by the Provincial Government and sundry sources of revenue, for expenditure on education, sanitation, conservancy, drainage, water-supply, medical relief, maintenance of roads, bridges and other means of communication, etc.¹ With such a paltry income it is impossible for the District Boards to provide these necessities and conveniences of life on any substantial scale. In addition to the District Boards, which provide for the general and

¹ Cf. the Calcutta Gazette, 28th February, 1923, p. 291, and the Report on the Administration of Bengal, 1920-21, p. 52.

common needs of the populations of the different districts as wholes, there exist Local Boards for subdivisions of districts, and Union Boards or Union Committees or Chaukidari Panchayats for groups of villages. But the Local Boards have no income of their own either from taxation or any other source, and have to depend entirely for their work upon the grants made by the District Boards. The income derived by the Union Boards, Union Committees or Panchayats from the chaukidari tax is spent wholly on the maintenance of the village police, their income from other sources is small, and they also have to depend upon the grants made by the District Boards for carrying out any projects of public utility. In 1921-22 these bodies responsible for areas varying from 5 to 9 square miles and for populations varying from 5,000 to 10,000 had on the average an income of Rs. 400 only for carrying out the objects which go to improve the general standard of living. It is an impossible task for these bodies with such paltry resources to improve even appreciably the conveniences and the comforts of life of such large populations living in such large areas. Thus, apart from the District Boards, no local bodies have financial resources worth mentioning, and the resources of these even, as mentioned just above, are hopelessly inadequate for the needs of the populations under their charge. This neglect of local administration in the delta is brought out more clearly by the following tables.

Statement showing the Income of District Boards during 1921-22.¹

(In the thousand of rupees.)

Name of District Board.	Closing balance of last year.	Local rates.	Interest.	Receipts under Cattle Trespas Act, etc.	EDUCATION.			MEDICAL.			CIVIL WORKS.					Total income excluding opening balance.	Deposits and Advances.	Total receipts including opening balance.	Incidence of taxation per head of population.	Incidence of income (excluding balances) per head of population.
					School fees, Govt. contributions, etc.	Prov. Govt. contributions.	Total.	Govt. contributions.	Other contributions, etc.	Total.	Tolls on ferries & roads.	Rent of buildings and lands.	Govt. contributions.	Other contributions, etc.	Total.					
coa	84	307	4	2	8	112	120	1.5	2.5	4	33	2	40	3	78	517	31	632	1	2
ymen- ingh.	201	562	2	23	11	149	160	1	10	11	56	1	51	7	115	87.4	95	1,170	1	3
uridpur	43	241	1	5	2	83	85	2	8	10	5	..	28	2	35	381	19	414	1	2
kar- ganj.	129	491	4	9	2	108	110	2	4	6	9	1	65	6	81	701	68	901	3	4
ppera	185	288	2	4	2	108	110	..	4	4	16	5	36	5.5	58	467	46	699	1	2
bakhali	152	251	..	4	3	69	72	..	7	7	13	1	41	13	68	408	32	591	2	4
ogra	70	133	.5	7	4	54	58	..	3	3	2	..	18	5	25	227	16	313	2	3
abna	98	154	1	10	5	51	56	1	1	2	11	..	21	5	37	251	21	380	1	2

¹ Compiled from figures given in the Calcutta Gazette, 28th February, 1923, pp. 286-97.

Statement showing the Expenditure of District Boards during 1921-22.¹

(In thousands of rupees.)

Name of District Board.	Office establishments, etc.	Cattle pound charges.	Inspection.	EDUCATION.			SANITATION.			MEDICAL.			TOTAL.
				Maintenance of Schools.	Grants-in-aid.	Scholarships, etc.	Total.	Vaccination.	Sanitation charges.	Total.	Hospitals and dispensaries and establishment charges.	Medical schools, charges on account of epidemics, etc.	
na	24	5	...	16	130	3.5	150	...	3	8	64	...	64
anensingh	37	1	...	95	144	4	243	1	32	33	80	28	108
dpur	20	1	3	28	71	4	106	5	9	14	37	...	37
arganj	27	5	10	34	114	3	161	5	10	15	69	...	69
vera	17	2	5	48	94	7	154	10	1	11	37	7	44
khali	17	1	3	29	89	39	160	1	5	6	32	..	32
ra	8	...	1	28	49	3	81	2	4	6	22	1	23
na	15	5	...	26	60	9	95	1	6	7	15	7	23

¹ Compiled from figures given in the Calcutta Gazette, 28th February, 1923, pp. 286-97.

Name of District Board.	Veterinary Department charges.	Pensions, gratuities, payments to service and Provident Funds.	Stationery and printing.	Miscellaneous.	Buildings, original works and repairs for education, medical and other objects.	Communications, original works and repairs.	Water supply and water works, original works and repairs.	Drainage works, original works and repairs.	Other works of improvement.	Establishment charges regarding public works.	Miscellaneous charges pertaining to public works.	Total expenditure chargeable to current income.	Debts : deposits and advances.	Total disbursements.	BALANCE.
Naoga	3	5	2	6	38	98	31	..	..	30	52	510	22	532	100
Sylmensingh	13	9	5	..	70	276	23	..	1	63	22	907	81	988	182
Faridpur	3	2	2	1	12	64	20	..	..	25	14	323	46	369	74
Bakarganj	7	5	2	10	40	301	64	26	..	52	9	796	40	836	66
Lippera	10	4	1	..	16	64	26	..	33	27	2	416	206	422	77
Noakhali	5	5	3	1	22	103	3	6	..	19	3	390	40	430	161
Bogra	4	2	1	..	15	49	16	..	..	14	3	222	5	227	86
Pabna	6	3	3	3	15	69	16	..	..	18	2	283	25	308	72

This weakness of local administration has been partly due to the absence of villages in the sense in which the word is ordinarily understood in India and other parts of the world. The absence has caused a deficiency of the germs of corporate life. To develop any form of local government in the rural parts of the delta something more is necessary than to stimulate village organizations already in existence and to increase their powers. Local authorities have to be created where nothing of the kind existed before, and what is far more difficult, a sense of public duty and a readiness to subordinate private wishes to public advantage have to be grafted where they did not exist.¹ The neglect of local administration has also been partly due to the conditions of foreign rule in India. History shows that it is a characteristic of foreign rule generally that all the attention is paid to the creation and maintenance of a strong central government, upon which the continuance of that rule depends, and that local administration, so far as it relates to the provision of material benefits for the people, is comparatively neglected. This is natural, because it is very difficult for foreign rulers to thrust material advantages upon people, which have not learnt to recognize their value, especially if they cannot be provided without a large increase of taxation.² If village taxation in the delta were to be increased at once to the Italian pitch, other taxation remaining the same, there would be great discontent throughout the delta, even if the people were provided with all the conveniences and comforts of life, which are enjoyed by the villagers of North Italy. This would be so, partly because the value of these benefits would not be appreciated by them at first, and partly because many of the actions of a foreign government, especially those increasing the level of taxation, would be looked upon with suspicion. It is certain, however,

¹ Cf. Bengal Census Report, 1921, p. 126.

² Cf. Jack, *Economic Life of a Bengal District*, p. 128.

that the people would be willing to pay somewhat higher taxation, if in return they could secure some of the more evident advantages which they could appreciate. The Central Government, however, has up till now objected to such an increase of taxation in order to avoid all possibilities of arousing any discontent. However, with the gradual transference of political powers into the hands of the representatives of the people, an increase in local taxation so as to enable the local bodies to provide the above-mentioned conveniences of life will become easier, and this subject will be examined later.

CHAPTER IX.

REMEDIES : POPULATION AND INDUSTRIES.

It has been explained in the previous chapter that the density of population in the delta is heavy, that population is increasing fast and threatens to lower the general standard of living, which requires to be raised, and that a reduction in the rate of its increase is most desirable. What is then the remedy? Malthus advocated abstinence from marriage until there was a reasonable chance of maintaining a family in the standard of comfort to which the person contemplating marriage was habituated. This remedy certainly possesses the advantage of making the individual look beyond his own pleasures to the well-being of his nation by insisting on the proper recognition of the responsibility of parenthood, but it makes too strong a demand upon human nature and places too great a strain upon the individual. Moreover, the unmarried state is detrimental to health and longevity, and the value of marriage as a life-preserver has come to be recognized. The figures collected by the United States Census authorities and by the New York State authorities prove that at all age groups the death-rate is considerably lower among married men than among bachelors or those men who have lost their wives by death or divorce. The reason for this appears to be that, while married men are protected by influences which prevent dissipation and promote regular habits of life, unmarried men are more subject to the dangers of an

irregular life. Moreover, the former have their wives to look after them properly with regard to food, clothing, housing, etc., but the latter have to depend upon servants or hotel-keepers in these matters.¹

Marriage at a more advanced age, especially for females, than is customary at present in the delta, will reduce the sufferings of many young wives and also the birth-rate to some extent. For, recent investigations tend to show that firstly the highest point of fertility is reached in the case of males and females at the ages of 25 and 18 respectively, that secondly the decline in fertility commences immediately after these ages are reached, and that thirdly the effect of delay in marriage in reducing fertility is much greater in the case of females than of males, it being calculated that, whereas a delay of three years in the case of the female reduces the average number of births by one, a delay of 40 years is required in the case of the male to bring about the same reduction.² But this remedy cannot solve the population problem of the delta, because the rate of natural increase, *i.e.*, the excess of births over deaths, is not less in most of the Western countries than in the delta, although the age at which marriage is contracted is considerably more advanced in the former than in the latter.

The remedy suggested by eugenics, *viz.*, marriage for only those who are physically and mentally fit for the maintenance of the race, cannot also solve the problem. For, in the first place, in the present condition of knowledge, it is not possible to select for the purpose of propagation. Although it is known that the influence of heredity is great, the knowledge regarding the working of its laws, especially with reference to the human species, is yet very imperfect. The science of eugenics may throw more light on this great

¹ Cf. Wattal, pp 9-10.

² See the Journal of the Royal Statistical Society, February, 1914.

question in the future, but at present individual differentiation for the purpose of propagation is impracticable. Secondly, even when more knowledge is acquired, it is most unlikely that this remedy can be applied, because it is based on an ideal of collective good, which individual interests would find it most difficult to accept. It would involve the sacrifice of happiness by numerous individuals for the sake of the cold, calculated and distant goal of the ultimate improvement of the race. Moreover, any such system of control and selection would be antagonistic to that yearning for freedom of opportunity and for individual advancement which is the keynote of human progress. Therefore, only a very limited application of this method is possible. Some kinds of criminals transmit their tendencies to their offspring, and the other members of society have a right to be protected from molestation on the part of successive generations of such criminals, by insisting that they may not be propagated at all. Again, some kinds of diseases are hereditary, and it is merciful both to would-be-parents and their children to prevent their transmission. But, beyond these exceptions, it is very unlikely that society, whatever be its organization, would select a part of its members as the only people entitled to propagate the race.¹

Can the pressure of population in the delta be relieved by the migration of a part of it to those parts of India which are sparsely populated? When it is mentioned that more than $\frac{4}{5}$ of India supports less than half of its total population, it may appear that the thinly populated tracts are capable of supporting a much larger population, and that there is a considerable scope for migration to these regions from the delta. However, an examination of the density of population on the cultivable and cultivated areas in these regions leads to a different conclusion.

¹ Cf. Taussig, *Principles of Economics*, 1915 edition, Vol. II, p. 236.

Province.	Density per sq. mile on total area	Density on cultivable area.	Density on cultivated area.	Percentage of cultivable to total area.	Percentage of cultivated to cultivable area.
Baluchistan ...	6	...	..	..	...
Kashmir ...	37	740	1,022	5	64
Burma .	53	126	515	42	32
Sind ...	75	590	...	49	25
Rajputana ..	82	...	...	...	..
Coorg ...	111	370	792	30	45
Assam ...	115	151	766	76	24
Central India Agency.	121	257	482	47	53
Central Provinces and Berar.	122	187	360	65	60

This table shows that none of the above regions with the exception of Assam and Burma is capable of supporting a much larger population than it is doing at present. It is true that figures are not available for Baluchistan and Rajputana, but in both these regions the rainfall is precarious, there is little irrigation, the soil is largely sandy and unproductive, and scarcity or famine is frequent. These two regions, far from being able to support a larger population, cannot support even their existing population a part of which migrates to the other parts of India. With regard to the other regions, it will be seen from the table that, although the density on the total area is not large, it is so on the cultivable area, and much more so on the cultivated area. This, together with the percentage of the cultivated to the cultivable area, makes it clear that the low density in these regions is the result of unproductive soil and scarcity of water, and that those parts of them, in which the conditions are more favourable, are already supporting a large population.¹

¹ Cf. Wattal pp. 44-5.

Only the Central Provinces and Berar, with proper development, appear to be capable of maintaining a somewhat larger population. Moreover, it is very important to remember that, whatever scope may exist in the near future for the support of a denser population in this or any other part of India, will be utilised for purposes of migration far more by the United Provinces and Bihar, which occupy a more central position, in which the pressure of population is greater, and whose people are less stay-at-home than by the Bengal delta. Thus, it seems clear that the delta cannot look to this means for relieving its pressure of population in any appreciable degree.

Some writers are of opinion that many of the tracts suffering from a shortage of water and at present sparsely populated can be made capable of supporting the surplus population of the densely populated tracts, if the area, which is classed as cultivable but which cannot be cultivated with profit under present conditions, as well as a part of the waste land are made available for cultivation by the construction of irrigation works.¹ They lay stress upon the fact that 87 per cent. of the surface flow of the rainfall is carried away uselessly to the sea by the rivers, and hold that even a part of this water will suffice for a large expansion of irrigation. It is true that irrigation in certain districts of the Punjab has been a great success, but it is exceptional on account of the specially favourable circumstances prevailing there, and cannot be taken as indicative of the prospects of irrigation elsewhere.² The usefulness and expansion of canal irrigation are subject to a number of definite limitations. On account of these the Irrigation Commission of 1901-3 came to the conclusion that the limits of productive irrigation works, *i.e.*, those which at least pay their own way, would be reached by

¹ Cf. for instance Shah's *Sixty Years of Indian Finance*, p. 307, and the Report on the Census of India, 1901.

² Cf. Wattal, p. 58, and Calvert, pp. 54-55 and 67-9.

1925. Later investigations have shown that the limits are a little wider, yet it is true that they would be reached when the existing schemes in Sind and the Punjab are completed, say within the next ten years. There is little hope of new schemes proving profitable in any part of India. The following are the limitations. In the first place, there are many large areas of barren and uncultivable waste on which profitable crops cannot be grown even with the aid of artificial irrigation. Secondly, artificial irrigation is necessary only in those tracts where the rainfall is scanty, but such tracts generally require the construction of storage works involving a heavy expenditure, in addition to canals and distributaries. Moreover, they submerge large cultivable areas, and a large part of the stored water is necessarily wasted through evaporation and percolation. Thirdly, the surface which is suited to the construction of canals, is often not suited to the construction of storage works. Thus the broken and rugged surface of Southern and Western India is favourable to the construction of the latter, but unfavourable to that of the former, while the position is reversed in the case of the flat surface of Northern India. Fourthly, when water for irrigation is obtained by constructing dams across rivers, the cultivators of the river valleys are deprived of their supply of water from floods, and their land has therefore to be thrown out of cultivation. The cultivators of the river valleys in the Punjab have suffered much in this way. Fifthly, in irrigated tracts land is generally made to bear as many crops as possible in the belief that water is the only essential factor of productivity while really it is only one of the factors, and this gradually causes an exhaustion of the chemical resources of the soil and ultimately leads to a diminishing yield. Moreover, canal water often deposits alkali on land and tends to produce a similar result. This effect is already being felt in parts of the Punjab.¹

¹ Cf. The Punjab Census Report, 1911, p. 49.

Sixthly, the excessive dampness produced by irrigation and the obstruction to the natural drainage systems caused by canal embankments spread malaria and impair the health of the population of the surrounding districts. This is the case in the districts irrigated by the Sone canals and certain districts in the Punjab.¹ As regards protective irrigation works, that is, those which cannot pay their own way, in addition to these limitations, there is another very important limitation, *viz.*, the heavy burden, which they throw upon the taxpayers, and which would become prohibitive if an extensive programme of such works were to be made and carried out. Moreover, the needs of the Central and Provincial Governments even in respect of productive expenditure, especially since the war, are so great, the demands for unproductive expenditure in other directions are so pressing, and the necessity for supporting the Government credit in the London and Indian money markets is so keenly felt, that for many years to come the Government cannot undertake the extension of protective irrigation works on any considerable scale beyond the magnitude which they have already reached.

It is true that the possibilities of well irrigation are greater than those of canal irrigation; but they also are subject to definite limitations. In the first place, the sub-soil supply of water must be adequate, and its quality must be good. Most tracts satisfy these conditions in Northern India but not in peninsular India. Secondly, the greater the depth at which the water becomes available and the greater the obstruction offered by the soil and the sub-soil to construction, the greater would be the cost of constructing the wells and raising the water. In this respect also, conditions in Northern India are favourable, but they are distinctly unfavourable in peninsular India. Thirdly, some crops require more water than a well can supply. Fourthly, no well, however good, can

¹ Cf. the Report of the Committee on the Sone Canals and the Punjab Census Report, 1911, p. 53.

make a poor sandy waste or hilly land bear paying crops. Finally, although the conditions for the extension of well irrigation seem to be generally favourable in Northern India it is significant that even there it has shown no definite tendency to expansion.¹ The possibilities of tank irrigation need not be considered, because the area irrigated in this manner is very small and restricted to Madras and the Central Provinces, and because even in them no endeavours have been made to develop this source of irrigation. Finally, it should be remembered that, even if any tracts become capable of supporting a larger population on account of the extension of canal or well irrigation, the opportunities would be utilised for purposes of migration far more by the United Provinces and Bihar than by the Bengal delta for reasons explained before.

The neighbouring province of Assam is capable of taking over a considerable part of the surplus population of the delta and of supporting it, as nearly $\frac{3}{4}$ of the cultivable area still remains uncultivated. Emigration from the delta to Assam does take place to a small extent, but it is unpopular on account of the prevailing system of labour recruitment for the tea gardens explained before, and the unattractive terms on which grants of land are made for purposes of colonisation. Unless the grants are made on more favourable conditions, and unless the tea planters offer superior terms and better conditions of work, Assam cannot be expected to relieve appreciably the pressure of population in the delta. But the vested interests of the tea planters, who are very powerful, would not allow colonisation on attractive terms, because few immigrants would care to become coolies on tea estates, if they could get land for cultivation on favourable conditions, and it is very doubtful whether the planters would take such a long and enlightened view of their own interests as to offer better conditions of life and work to their coolies, because

by doing so their profits would diminish at first, although they may increase later. In addition to these difficulties, the prevalence of malaria and kala-azar and the lack of communications would discourage the people of the delta from settling in Assam. Burma also cannot be expected to relieve the pressure of population in the delta, although it is capable of maintaining a considerably larger population. For, in the first place, a Hindu is supposed to lose his caste, if he crosses the ocean, and he would have to incur this disability by going from the delta to Burma, as the journey has to be performed by water. Secondly, twenty years ago the Government of India inaugurated a policy which has proved distinctly unfavourable to the settlement of Indians on the land.¹ Thirdly the Burmans are increasing so rapidly that they are fast occupying all the fertile land of the country, and have also begun to drive the Indians out of urban occupations, which the latter had almost monopolised.² And lastly, the Burmans have lately developed an independent national consciousness and spirit, which are rapidly gathering force every year, and the cry now is "Burma for the Burmans and keep out the Indians."

The scope for emigration from the delta to other countries is also negligible. Emigration to the white colonies or to the self-governing Dominions of the British Empire is out of the question, because the white population there wants to keep out all coloured races, and because even the few Indians who have already settled there have had to struggle continuously and in most cases unsuccessfully against racial disabilities. The only other countries offering any scope in this direction are Ceylon, the Straits Settlement, the Malay States and Mauritius. But it is restricted by the limits of the development of the tea industry in Ceylon, the rubber industry in the Straits Settlement and the Malay States and the sugar industry

¹ See Wattal, p. 38.

² Cf. Burma Census Report, 1911, p. 80.

in Mauritius, for which alone labour is required in these countries. Moreover, the emigration to these countries has been hitherto monopolised by the depressed classes of Madras, who are not hampered by caste or social restrictions, and it is probable that it will continue to be monopolised by them, leaving no room for the people of the Bengal delta.

Much has been made of the stay-at-homeness and immobility of the people of the delta. But it should be remembered that this is true of any Western people, although to a less extent. The actions of man are not governed only by considerations of pure economic advantage; they are largely influenced also by sentiment and religious, social, political and other considerations. He is reluctant to leave his home and to settle in some distant place, because he feels unhappy in strange surroundings, loses the pleasure of association with his relatives and friends, may not obtain assistance in case of illness or ill-luck, and very often cannot secure economic advantages large enough to make up these losses and risks. The people of the delta, although more immobile than those of the Western countries, and a little more so than those of some other parts of India such as the U. P., Bihar and Madras are yet alive to considerations of economic gain, and if emigration could have held forth the promise of such gain, there is little doubt that an appreciable part of the population would have managed to overcome the difficulties mentioned above. But it has been made clear that emigration to any part within India or outside it offers little real scope, and this is really responsible for the fact that the population of the delta does not move away from its home.

What are the possibilities of relieving the pressure of population in the delta by extending the cultivated area in the delta itself and in other parts of the province of Bengal? With the exception of the Sundarbans in the South, and Hill Tippera and Chittagong Hill tracts in the east, almost all the districts are densely populated, and most of the cultivable area

is already under cultivation. Thus, although there is some scope for the extension of cultivation in these districts, it is not large enough to relieve appreciably the pressure that is being felt. The Sundarbans extend over 1,700 square miles of flat alluvial area, but the cost of clearing the jungle, draining the marshes and making the area fit for cultivation and human habitation would be stupendous, and even if all this were to be accomplished, the havoc that malaria would cause, would make the existence of a large population in this area impracticable for many years to come. Most of the land in Hill Tippera and Chittagong Hill tracts is hardly fit for cultivation, consisting as it does of hills and ravines covered with thick jungle. Ultimately it may become possible to clear up the Sundarbans area, to make it fit for cultivation and human habitation, and to conquer malaria, but there is no doubt that the time will be long in coming. A beginning, however, may be made in the near future.

It will be possible to relieve the pressure, to some extent, by cultivating more intensively the area which is already under the plough, but, as will be seen later, the possibilities in this direction are limited. The pressure may also be relieved to some extent by improving the condition of the cottage industries, as a permanent measure in some cases and as a step towards the introduction of a simple factory system in others, in ways to be explained later. Sir Edward Gait in his Census Report for 1911 and Mr. Wattal state that, in India as a whole, industrial development, far from diminishing the pressure of population on the soil has increased it, because it has taken the form of the substitution of the machine for the hand worker, *i.e.*, of the substitution of methods, which require two hands, for methods which formerly required four hands for the same outturn. But the use of machinery cannot increase the pressure of population on the soil, because machinery makes it easier, not more difficult, for a community to obtain what it wants. These two writers appear to have

thought that people live on their employment, instead of on what it produces. In the delta, therefore, attention must be paid both to the establishment of factory industries, and to the improvement of cottage industries. It has been explained before that in the delta a number of cottage industries have survived the competition of factory industries nearly for a century, that factories can never hope to destroy the artistic cottage industries, which afford considerable scope for improvement and expansion, that some of the manufacturing cottage industries also are able to withstand the competition of factories because they meet certain special requirements of the people of the delta, that they also can be expanded, and that the other manufacturing cottage industries may be so improved as gradually to lead to the introduction of factories. Moreover, it is possible to establish entirely new industries in the delta, such as the manufacture of leather and jute goods, which will increase the field for employment. Therefore, it appears that industrial development in the delta, if carried on along right lines, will help to alleviate the pressure of population on the soil. The help, however, cannot be very large, because the delta is bound to remain predominantly agricultural, and because industrial development, however successful, can at best give employment to thousands, while relief is needed for hundreds of thousands.

It is thus seen that the remedies generally suggested for reducing the pressure of population and the rate of its increase in the delta are either undesirable or impracticable or inadequate. The third set of remedies must, of course, be applied to the fullest extent possible, but some other remedy or remedies, which would be more effective, must be found. Such a remedy seems to be afforded by the adoption of voluntary restraint in married life. It has been explained before that marriage is, on the whole, desirable for all persons who keep ordinarily good health, but the number of children which they beget must be limited by the adoption of voluntary restraint

in conjugal union, according to the resources which the fathers possess for bringing them up and giving them a fair start in life. The medical science has proved that the fecundity of the human female is greatest during certain days of the month, that it goes on diminishing until the lowest point is reached when the chances of conception are small, that it then goes on increasing until the highest point is reached and the cycle is completed in a month, and that abstinence from union during the period, when fecundity is active, will go a long way in preventing conception without injury to the health of both the parties concerned. The beginnings of the application of this remedy in Bengal, although very small, may be already detected. The Census Report for 1901 mentions, "It has more than once been pointed out by Settlement Officers that the size of a landless labourer's family is smaller than that of a cultivator, and there seems to be no reason why this should be the case unless preventive checks of some sort were employed. Mal-nutrition would account for the diminished fecundity of the labouring classes in years of famine or great scarcity, but this by itself would, as a rule, merely postpone conception. A low birth-rate immediately after a famine is usually followed by a period in which the number of births is exceptionally great; and there is no reason to suppose that in ordinary years the conditions under which the labouring classes live are unfavourable to child-bearing. Moreover, the phenomenon is not confined to the labourer. Mr. Stevenson-Moore finds that amongst cultivators also the size of the family varies with the size of the holding." This shows that the remedy suggested above is not impracticable even in the existing social conditions of the delta, but it is essential that it should be applied on a very much larger scale than is the case at present. For this purpose, what is required is a better realisation of the high responsibilities of fatherhood and motherhood and a widespread knowledge of the remedy among the mass of the population.

Can Neo-Malthusianism, *i.e.*, the prevention of conception by the use of artificial means at the time of union, be advocated for the delta as a remedy? Its advocacy began in England during the lifetime of Malthus, although he definitely disapproved of it.¹ James Mill first advocated it in guarded language in an article in the *Encyclopaedia Britannica* in 1818, and was followed by Francis Place, who openly advocated these practices four years later. The propaganda was continued by various men, it gradually spread to other countries, and has by this time made a considerable advance in some of the Western countries, especially in France. Medical opinion is, however, divided as to the effect of the practices upon health, some authorities maintaining that they injure it, others denying this contention. Strong religious objections have also been urged against them. But their economic effects are favourable, as can be seen in France, where they are more resorted to than in any other country. Dr. Warren Thompson has proved by means of statistics that whereas in Great Britain, the United States and Germany the workmen received progressively diminishing real wages, as measured in terms of food, for more than two decades before the Great War, the real wages of their fellows in France increased during the same period.² This improvement was not confined to the better classes of the workmen, but was general, and several writers and travellers expressed the opinion that the labouring classes as a whole were better off in France than in other countries.³ The most important cause, although not the only one, of this improvement in welfare was that during some decades before the War the French population increased very slowly, although the productive capacity of man increased far more rapidly during this time than in any other period

¹ Cf. Carr-Saunders, the Population Problem, p. 31.

² Population, A Study in Malthusianism, Ch. III.

³ Cf. George, France in the Twentieth Century, pp 243-63; Prothero, The Pleasant Land of France, pp. 25-92; and Lynch, French Life in Town and Country, *Passim*.

of history. This enabled the French lower classes to obtain more of the fruits of the increased productive power than would have been possible if their numbers had increased more rapidly. The restriction of population made it possible for France to develop its industrial life slowly, to maintain a balance between industries and agriculture and between population and production of food, and this enabled the mass of the population to improve its standard of living. But the other countries endeavoured to furnish subsistence for rapidly increasing populations by rapidly increasing their manufacturing productivity, and they had to pay the cost of the struggle for industrial and commercial supremacy, in the shape of periodical unemployment on a large scale and pauperised classes. Some of the French economists however, have failed to realise the truth in the theory of Malthus, and have been afraid that immigration of people with lower standards of living would take place in large numbers into France from surrounding countries, and that they would multiply so rapidly as to denationalise the French people, or that the nations to the east of France whose populations have been fast increasing would soon be able to conquer her.¹ They have failed to realise that what Malthus maintained was that preventive checks must be resorted to if the conditions of a people were to be improved, that this has taken place in France while the other countries have been struggling to maintain rapidly increasing populations, and that it has been for this reason that the surrounding countries have been endangering the position of France.² Although the Bengal delta is free from difficulties of this kind, its social conditions are not advanced enough to make the adoption of Neo-Malthusianism practicable, even if there were no objections to the system on medical and religious grounds.

¹ Cf. Leroy-Beaulieu, *La Question de la Population*, Book V, chap. III, and George, *France in the Twentieth Century*, pp. 254 and 259.

² Cf. Thomson, *op. cit.*, p. 162.

But several general objections, apart from medical and religious ones, have been raised against Malthusianism and Neo-Malthusianism, and therefore it is necessary briefly to examine here the more important of them. In the first place, it is urged that there can never be any *practical* necessity for endeavouring to limit the growth of population. It is no doubt quite true that population, at any one time, must be limited to the available means of subsistence, but in the absence of a conscious limitation, nature brings about the necessary adjustment by causing an enormous wastage of human life and preventible suffering, which are generally ignored by those who prove victorious in the struggle for existence, but which can be and ought to be checked by consciously limiting the growth of population. Secondly, it is said that any limitation being unnatural, must be injurious to society. But every step in the progress of civilisation has consisted, not of obeying nature blindly and suffering the results, but of controlling it and diverting its operation into wholesome and profitable channels. Thirdly, it is maintained that limitation may prevent the birth of another Newton, Stevenson, Edison or Marconi and that society would be a great loser thereby. But any such loss would be far more than counterbalanced by the gain that would result from the avoidance of preventible destruction, wastage of life and misery that prevail to-day on account of the unrestricted operation of the law of nature. Fourthly, it is objected that limitation would restrict competition and thereby reduce its advantages to society. However, it may be pointed out that the persons, who survive as a result of the operation of the law of competition and of the survival of the fittest, are not always those whom society would choose for its own good. Circumstances and surroundings, if propitious, save many unfit persons, and if unfavourable, remove many fit persons. Limitation, by reducing the extreme stress of competition and by bringing it within proper bounds, would reduce the magnitude of this anomaly. Lastly, it is urged

that limitation, by enabling the enjoyment of married life without its responsibilities and burdens, would encourage selfish gratifications and lower the moral tone, especially in the case of the upper classes. It is true that such a danger exists, but it is most easy to attach too much importance to it. Morality is really subjective, and the external standards of enforcing it vary from one country to another, and from one time to another in the same country. The real criterion of a moral or non-moral act is not whether it does or does not conform to the external standards prevailing at the time, but whether it promotes the preservation of society or not. From this point of view, many of the prevailing social customs in the delta are more unmoral than any system of limiting the growth of population.¹

As regards the religious objections, it is completely to misunderstand the spirit of the ancient Hindu law-givers to suppose that the Hindu religion enjoins upon the householder the duty of begetting children, although he cannot hope to provide for them, and that a limitation of the family by the exercise of prudence in married life cannot be brought about without a violation of the dictates of that religion.² Manu says:—"By the eldest as soon as born, a man becomes father of male issue and is exonerated from debt to his ancestors; such a son, therefore, is entitled to take heritage. That son alone, on whom he devolves his debt, and through whom he tastes immortality, was begotten from a sense of duty; others are considered as begotten from love of pleasure." Moreover, it may be mentioned that the Hindu religion lays down certain social restrictions, which, if properly observed, would have the effect of enforcing considerable restraint in married life.

The remedy suggested above would be more effective, if it is accompanied by a progressive improvement in the standard of living of the people of the delta. When a

¹ Cf. Wattal, p. 30.

² Cf. Kale, Introduction to the Study of Indian Economics, p. 156.

moderately high standard is reached by, and becomes fixed in a people, they develop a capacity to rise further more easily as well as to offer a powerful resistance to any lowering of the standard. In fact, a limitation of population and a high standard of living interact upon each other. The former makes the latter possible by a division of the total resources among fewer persons than would be the case otherwise, and a people used to a high standard of living resist any lowering of it, and endeavour to improve it, by limiting their own growth. The experience of Western countries shows that the higher the standard of living of any class, the less numerous it tends to become. However, the tendency towards a limitation of the growth of population does not begin to operate until a high standard is attained. A substantial and fairly rapid increase in the wealth of the delta, leading to a corresponding expansion of earnings, will, therefore, be needed to raise the people of the delta to such a standard of living as will begin to check the growth of population.

It has been explained before that one of the important ways of achieving this end is to secure a sound and effective organization of the cottage industries of the delta, as a permanent measure or as leading gradually to the establishment of simple factory industries. For this purpose, a number of problems must be faced and solved. They are (1) supply of capital on a commercial basis, (2) organisation for the supply of raw material, marketing the finished goods and finding out the requirements of the market, (3) organization for the proper supervision and control of labour and production, (4) economy of labour, (5) provision of improved appliances, (6) education of the workers in the use of improved appliances and the appreciation of the value of economy of labour.

To turn to the last problem first. In the Western industrial countries the old system of apprenticeship to master-artisans has almost disappeared; but its decline took place

after the replacement of domestic industries by the factory system, and it was supplanted by a well-organized and widely developed system of training in municipal and other technical evening schools. In the delta, as generally in India, the conditions are yet different. The artisans are ignorant and conservative, and without any knowledge of their trade except what can be acquired locally. Their lack of education denies them access even to the most elementary technical literature. Moreover, they have no ambition, and cannot appreciate a higher standard of living. Hence the first thing necessary to improve their condition is to educate them. A few weaving and other industrial schools of the elementary grade managed by missionary societies or by district boards exist in the delta. But they have achieved little so far. The former have their special semi-religious object in view, the latter are handicapped by a lack of funds. Both have had no suitable model on which to work, their equipment and teaching staff have been imperfect, and they have been teaching only the ordinary bazaar methods. But, with proper organization, such schools are capable of becoming efficient instruments for educating the artisans in the future. It is true that the training given in these schools will remain defective in so far as it is imparted under non-commercial conditions, which is inevitable, but they seem to be the only means by which the artisans can be trained. Therefore, an industrial school should be started at every district headquarters and at other important centres under the control of the Department of Industries. In order to guard against failure, in the beginning the training in these schools should be restricted to the industries which already exist in the area; the encouragement of new industries and the creation of a demand for training in them must be left to later development. However, the training must be more substantial than the mere teaching of the ordinary bazaar methods by mistries, who are paid less than what a good workman can earn. For this purpose, each school should be

under the control of an expert head-master or superintendent attached to the Department of Industries and possessing a thorough practical knowledge of modern methods of handicraft, a specialised knowledge of certain branches and an ability to apply general principles to specific requirements. Such a man can teach students to turn out much better work than is done by the ordinary artisans, with less time and energy. It is true that such men are not easily available, but the difficulty can be got over gradually by making those, who become available, train selected pupils of fairly good educational attainments for the purpose of ultimately making them teachers. Under the superintendent, there should be a subordinate expert and a trained artisan for each of the more important industries existing in the area for which the school exists. The presence of the latter, who should be a local man and himself a proof of the good results of industrial training, would create confidence in the pupils.

The teaching in the schools should be so organised as to afford practical instruction in the use and value of improved appliances and labour-saving devices, the methods of preparing and employing in the most advantageous way the raw materials in actual use and their substitutes, the importance of finish and quality in the goods turned out, and the value of economical distribution of labour. Moreover, much can be done in teaching the use of new designs and patterns to these artisans, to whom new ideas do not occur readily on account of their lack of contact with the outside world. However, the teaching must make a distinction between manufacturing industries such as weaving, which have to compete more or less with factory industries, and handicrafts such as carpentry and smithery which have to be carried on mainly with the hand even in organised workshops.¹ In the first case, much more attention must be given in the training of the artisan to teaching him the use of the best appliances than to the degree

¹ Cf. Report of the Indian Industries Commission, 1916-18, p. 111.

of skill which he acquires in using them. The appliances are semi-automatic, an intelligent worker can learn to use them without much difficulty, the quality of the work produced does not depend much upon his personal skill, and the important considerations for his success are commercial, such as the quantity of work turned out and the outlets for its disposal. But in the case of handicrafts, the appliances are not semi-automatic, the quality of the work depends wholly upon the personal skill of the worker, and therefore the teaching must be such as to make him acquire gradually manual skill in carrying out the various processes involved in his craft. Commercial considerations, such as the quantity of work turned out, must entirely be set aside at first, and attention should be paid to them only after the necessary degree of skill has been acquired. However, in all cases, the results would not be satisfactory unless the pupils are induced to go through the whole course, so that their training is complete when they leave the schools.

The students of these schools should belong to the artisan classes, and in the present state of feeling among the classes, the teaching would have to be imparted not to their boys and youths but to the adult workers themselves. The fathers would object to their sons being taught methods of work of which they themselves know nothing, and the only way out of the difficulty seems to be to train the fathers themselves. But they would not be willing to pay for what would appear to them doubtful improvement, and therefore one of three courses must be followed, *viz.*, that they should be paid wages approximating to their usual earnings, while they are receiving training, or that they should be paid according to the value of the work turned out, or that they should be allowed to take away and dispose of the goods made by them, after paying for the materials used. It would be difficult to adopt the third course, if a proper distribution of labour were to be carried out, but it has the advantage of freeing the school

authorities from the responsibility of disposing of the goods. That the second course can become successful and make the schools wholly or almost self-supporting is shown by the fact that it has been satisfactorily worked out in the industrial schools for hill-men at Kalimpong.¹ At first it may be necessary to adopt the first course, and it may be admitted that during the early part of a student's training the value of the work turned out by him with appliances to which he is not used would not make him earn the wages paid to him ; but, as the training is meant to enable him to produce more goods of a better quality, after a short time the value of the products turned out by him in the course of the training, after deducting the cost of the materials used, would be greater than the wages paid to him according to his usual earnings. Therefore, it is probable that such schools, once well-equipped, with proper organisation would become entirely self-supporting or require a minimum of financial assistance.

Since the Swadeshi movement, the cottage industries have attracted the attention of a few members of the middle classes, who have recognized that they afford a large scope for improvement in methods of work and organization and for profitable employment of capital. Efforts have been made to start small factories and to employ artisans, but they have failed mainly because these middle-class men had no practical knowledge of the industries to which they directed their attention. The efforts, however, deserve encouragement and support, because if successful, they will help to augment the industrial wealth of the delta by the gradual establishment of a simple factory system, and at the same time will help, to some extent, to solve the problem of middle-class unemployment. It is therefore desirable that in one or two of the industrial schools, whose establishment in the delta has been advocated above, preferably in that in Dacca, provision should be made for the training of a small

¹ Cf. Ascoli's Monograph on the Cottage Industries of Bengal, p. 8.

number of pupils belonging to the middle classes, possessing fairly good education, and likely to be able to secure sufficient capital to start ultimately in the industry themselves. The training of such master-artisans will necessarily be higher and take a much longer time than that of the actual workers. However, in order that it may lead to success, it is necessary that the training should include practical experience in the control of workmen and in the management of a commercial concern. This experience can be provided only when work is done under commercial conditions. Of the two alternatives suggested in this connection by the Indian Industrial Commission, *viz.*, the starting of small factories or village associations under private control, but with Government assistance in some suitable form, and the attachment of a purely commercial section to the school itself,¹ the latter appears to be more feasible at least during the first few years, because it seems improbable that the required private enterprise involved in the first alternative will be available in the next few years. In the commercial section of the school, therefore, the master-artisans should be provided with the commercial part of the training, which they must obtain before setting themselves up in actual business.

It is also necessary to establish a school of design preferably at Dacca, for the value of many of the industries of the delta depends upon their artistic merit. An improvement in many of the designs at present employed by the artistic industries is very desirable, and should be undertaken by the school, and the application of the improved designs to existing industries should be undertaken by the district committees of the Association, whose organisation will be suggested later.

For the removal of the other difficulties, from which the cottage industries are suffering, a few co-operative societies have been started. But the scale on which they are working is exceedingly small as compared with the needs of the

¹ See its Report, p. 197.

artisans in the various cottage industries. Moreover, even if their working were to be considerably developed, it appears that, far from being able to solve most of the difficulties mentioned above, they cannot hope even to perform adequately all the functions which are fulfilled at present by the mahajans, whom they are meant to supplant. It has been explained before that the mahajans not only lend money to the artisans, but also supply the raw materials, designs and some supervision, and also market the finished articles. Co-operative societies can supply raw materials and arrange for the marketing of the finished goods, but it is difficult to see how they can make adequate arrangements for finding out the requirements of the market, for the provision of designs that will suit the market, and for supervision, etc., in short for those commercial requirements, which alone can make an industry successful. It is true that in one or two industries, such as the conchshell and button industries, in which the expert craftsmen are their own supervisors, the societies can be developed to a greater extent, but these difficulties will remain great in other industries. Government may appoint touring officials to advise on improved methods of work—an Inspector of Weaving Societies has been appointed—but they cannot be expected to be in close touch with the market or to exercise adequate supervision. It is found that the societies tend to stereotype old designs and methods instead of adapting them to the requirements of the market. The main difficulty in the organisation of such societies lies in the absence of persons of intelligence and standing, who are acquainted with the business, but whose interests are not opposed to the success of the societies. The interests of the mahajans, who know the business, are entirely on the side of keeping the artisans in their present condition of utter dependence, and there are hardly any educated persons with sufficient knowledge of the working of the industries and with sufficient public spirit, who can organise the societies successfully. The

real solution of these difficulties seems to be to encourage the real organising capitalists, who will take a wide and comprehensive, instead of a shortsighted, view of their own interests and recognise that their ultimate success is dependent upon the welfare of the artisans, to come forward. It is very unfortunate that at present there are no moneyed persons willing to come forward to organise any of the cottage industries and to place them on a proper commercial footing. Local zemindars should be induced to come forward for this purpose. The organising capitalists may either put out work for partial manufacture in the homes of the artisans and then complete it in a small factory, or simply bring them together in such a factory, make them work in it instead of in their homes, and pay them better wages than they earn at present. There is a tendency to organise such small factories in some other parts of India,¹ and it should be created and encouraged in the delta. However, it must be admitted that, although such schemes, if successful, will substantially increase the efficiency of production, they are not free from the danger that the artisans may be exploited by the capitalists, if the latter are short-sighted like the Mahajans and pursue their methods.

All this does not mean that the co-operative societies cannot play a useful part in strengthening the position of the cottage industries. They can do much in this direction, but their limits must be recognised, and they must leave room for the organising capitalist. Although it is necessary to make available to the artisans the means of cheap credit and the educative and other advantages of co-operation, it is even more essential to guard against giving them these advantages at the expense of their industry, by confining it within limits that will check its development. With regard to the development of the co-operative movement, it may be pointed out that its success largely depends upon the preparation of the

¹ Cf. The Report of the Indian Industrial Commission, p. 196.

ground by the educative influence of co-operative credit, which is the easiest form of co-operation. But, if the work which a society is called upon to do requires extensive organisation or technical knowledge, it is undesirable to saddle a primary society with it because it would be beyond the capacity of such a society, and because it would not be properly understood by its members. For instance, a primary weavers' society would not generally be strong enough to finance the sale of the goods turned out by its members. It is better to get such work done through co-operative unions specially established for it. For the formation of a co-operative society, there must be close co-operation between the Industries Department and the Co-operative Department. It is only an officer belonging to the former, who can point out the full trade advantages of organisation in a co-operative society for a particular group of artisans, by doing propaganda work among them regarding improvement of methods of production, supply of raw material or disposal of products, etc. When he feels satisfied that there is scope for the work of a society in this group, *i.e.*, that its business is suited to co-operative financing and management, and that the members are capable of working together in a co-operative society, he should ask the Co-operative Department to perform its share of the work by sending an officer to form a society. The latter would explain to the group of artisans in question the advantages as well as the obligations involved in becoming members of such a society, and then, if he feels satisfied that they have understood the explanation and are willing to act up to it, and that the co-operative financing of the society is practicable, he should get the society registered. After a society is formed, it would be the concern of the Co-operative Department to see that it is properly administered, and of the Industries Department to give practical advice regarding sources of supply, machinery, methods, markets, selection of products, etc., when such assistance is desired. The financing

of the society should take place through a union. But when the societies are scattered, it would be difficult to group them into unions, and then they should be financed direct by the central banks. Advances should normally take the form of raw materials and implements and not cash. Government assistance in the form of loans, grants or guarantees would be necessary.

Finally, the improvement of the cottage industries and of the economic position of the artisans would depend very largely upon the opening up of new markets in Bengal, in other parts of India and outside India for the articles turned out. The industrial success of Japan has been, to a large extent, the result of the determined efforts that have been directed to the establishment and development of business organisations, which take over the products of the cottage industries and sell them throughout the world. The same is true of the cottage industries of Germany. When the demand for their products increases, the artisans themselves endeavour almost always to improve their methods of production. But so far nothing has been done to secure new markets for the goods of the cottage industries of the delta. So far, the Mahajans have shown little enterprise and capacity in this respect, and have done nothing to encourage the artisans to turn out such products as can be readily disposed of in other parts of India or in foreign countries. Two sale depôts, one in Dacca and another in Calcutta, should be established on a co-operative basis, with the assistance of organising capitalists, and after these have proved commercially successful, endeavours should be made to secure wholesale and export markets, by establishing connections with stores and selling concerns in other parts of India and foreign countries. The depôts should be regularly supplied with goods collected locally in the several districts of the delta by co-operative unions. At first the Calcutta and Dacca markets may not be able to absorb all the goods until some time has elapsed after their arrival in the depôts. In this case the Provincial Co-operative

Bank should be approached for financing them, and if it is unable to do so, Government financial assistance may be sought. The depôts must be placed on a self-supporting basis by charging a reasonable commission for selling the goods, which would leave to the artisans a fair value for their goods. For their sale, they must not depend, to any considerable extent, upon casual visitors. The usual business methods of pushing on sales, such as the issue of advertisements in various forms, catalogues, price lists, etc., should be resorted to, and vigorous management should be adopted. The depôts may periodically hold exhibitions, where artisans, who otherwise remain isolated, may be brought together to compare their work with that of others. They should work in co-operation with the Department of Industries, which can make available to them much valuable information and advice.

Proceeding to factory industries, it appears that the starting of some jute mills at Narayanganj, Chandpur or Chittagong is only a question of time, and that with the industrial development of the delta and the growth of the commercial importance of these centres, enterprising firms will open branch mills there, because the difficulties, that were mentioned before, although real, are not insuperable.¹ In the first place, it is true that the difference in the freight of raw and manufactured jute is not substantial in the case of export from these centres to Calcutta, but, when it is pointed out that a large part of the manufactured jute has to be exported to foreign countries, it becomes clear that the advantages which mills and exporting houses at these centres will have over those near Calcutta, will be so substantial, that an enterprising firm will have only to take the lead to have its example copied by a number of Calcutta firms. Secondly, the labour difficulty will not be insuperable. It

¹ Cf. G. N. Gupta's *Survey of the Industries and Resources of Eastern Bengal and Assam*, p. 64.

has been explained before that plenty of local labour, which is really not required for agriculture, is available. Jute mills will give it the opportunity of obtaining a good day's work and earning a full day's wage, and thereby do much to promote the welfare of the delta. However, it is doubtful whether local labour will give up its laziness and prejudices and come forward. But even if it does not do so, the labour difficulty is capable of solution, because the Calcutta mills also have to depend upon imported up-country labour, and it will be possible to attract, by offering adequate inducements, a sufficient quantity of similar labour to the towns in question, which are much healthier and cheaper to live in than Calcutta. Thirdly, it will cost almost the same to bring from North Bengal those varieties of jute which are not grown in the delta to these centres as to bring them to Calcutta. Finally, the mere fact of the manufacture of jute at one or more of these centres, coupled with the advantage mentioned above, and the efforts of the firms concerned, will in a short time lead to the establishment of the necessary market there. It should be remembered that unless goods are first available for sale in a locality a market in them cannot be established there.

It has been seen before that, while raw hides and skins are exported in large quantities, the tanning and manufacturing industry is undeveloped in the delta. Yet the industry is flourishing in Cawnpore, Bombay and Madras. The reasons for this appear to be that the Government of India led the way in the first two cities by establishing factories of its own, and that its military and other departments have been purchasing large supplies of leather goods from these cities. It is most unlikely that such valuable stimulus will be available for the delta, and the only alternative seems to be for the Provincial Government to pioneer a tanning and manufacturing factory at Dacca. The great importance of starting a factory doing work on a large scale under expert

management with the latest methods and appliances, which will give a start to the industry in the delta, has been universally recognized.¹ Two or three branch factories, under the management of District Boards and Municipalities, may be opened at suitable centres such as Mymensingh and Pabna. The primary object of these factories must be to demonstrate the commercial success of such concerns, and to hand them over to private capital and enterprise, as soon as they become willing to take them over. Middle-class capitalists appear to have good opportunities for the establishment of moderate leather factories, as the required capital is not very large, as the raw materials are abundant, as a comparatively cheap supply of the labour of local chamars and muchis is available, and as there is a good demand for home-manufactured goods. Such capitalists may be able to arrange with District Boards and Municipalities for starting the factories under semi-Government auspices.

¹ Cf. G. N. Gupta's Survey, p. 49.

CHAPTER X

REMEDIES : AGRICULTURE

For an improvement of the well-being of the delta vigorous and persistent efforts must be made to increase its agricultural wealth also. It has been explained before that the possibilities of increasing it by bringing more land under cultivation are strictly limited. But those which exist should be fully utilised by devising well-conceived schemes for reclaiming and colonizing such waste lands as may be found suited to this purpose. Government should encourage private enterprise to take up such colonization schemes by granting liberal financial assistance in the shape of mortgage loans, which should be advanced by instalments as the clearing, draining and improvement of waste lands are carried out. In England during the first half of the last century extensive drainage schemes for reclaiming fens and bogs were carried out by the larger landlords and local authorities, and Government advanced large sums to them for this purpose. The scope for more intensive cultivation of the land already under the plough, is, however, considerably greater than that for more extended cultivation. Experience of other countries shows that improvement in methods of cultivation or progress towards more intensive agriculture can seldom be expected unless it is compelled by economic pressure. The object of cultivators is generally to obtain a good income, and agriculture being largely subject to the law of diminishing returns, it is easier to obtain the same income from an area extensively cultivated than from a smaller area intensively cultivated. Thus, in America where land has hitherto been abundant, the farmers have preferred a small yield per acre from a

large area to a larger yield per acre, from a smaller area. But the highly intensive system, which is the main feature of agriculture in Japan, is not the result of any natural industry of its people, but has been forced upon it by the lack, until recently, of any outlet for its rapidly increasing population. Again, the famous saying of Arthur Young, the great English writer on agriculture, that the magic of property turns sand into gold, was the outcome of his comparison of the methods of the English tenant-farmer with those of the French peasant-proprietor, but the laborious industry of the latter, which impressed Young so much, was really the result, not of his proprietorship of his holding, but of the fact that, whereas the English tenant-farmer had about 150 acres for making a living, he had only 25 or 30 acres for the purpose, for experience has shown that what is essential to good cultivation is fixity of tenure and not ownership.

It has been fully explained that the average size of holdings in the delta is small, and that many of them are tending to be uneconomic. When holdings are small, a decent livelihood can be obtained from them only by a highly intensive system of cultivation, which requires unremitting industry, supplemented by some subsidiary occupation. But the cultivators of the delta have been pursuing methods of cultivation, which are adapted only to large holdings, and it would be an impossible task to make a decent living out of small holdings by such methods. It has been explained before that, on the whole, they use primitive implements, neglect the use of animal and other manure and of improved seed and the proper exploitation of fruit and vegetable growing for sale, that they devote very little area to the growing of fodder, that they have no trade worth mentioning in cattle and pigs and animal products, except raw hides, mainly owing to religious sentiments, ignorance and prejudice, that they pay hardly any attention to the profitable work of rearing poultry, geese, ducks, turkeys, pigeons, etc., for sale, and that they have no

subsidiary occupation such as sericulture, bee-keeping, etc. It is true, as explained before, that small holdings are not peculiar to the delta, and that the same problem exists in other parts of India and the world. But the countries of Western Europe, especially Belgium, have solved the problem by means of scientific agriculture. Staple crops such as wheat have largely given place to market gardening, crops for feeding live-stock and valuable industrial crops, such as sugar beet, tobacco and flax. The area devoted to wheat is only 1, 5, 5, 9 and 21 per cent. of the total cultivated area in Denmark, Great Britain, Germany, Belgium and France, respectively.¹ More manure is used and more cattle are bred per acre in these countries than in any other country, and in Belgium and Denmark there is a large export trade in cattle and cattle produce such as butter, cheese and meat, and in other animal products, such as bacon, ham, eggs, etc.

There can be no prospect in the near future of an increase in the average size of holdings in the delta, because a change in the present system of equal inheritance of land is not a practical proposition, and because industrial progress, which will reduce the pressure of population on the soil, is bound to be slow. But a large number of holdings, which are uneconomic now, when extensively cultivated, can be brought within the economic margin, if the methods of cultivation are changed, communications with markets improved, expenses diminished, and income increased by means of co-operation. It is not simply the area, but its net product, depending upon the methods of cultivation, proximity to markets etc., that determines whether a holding is economic or not.

The chief obstacle to the success of intensive cultivation is the difficulty of obtaining markets to absorb all that is produced by it, and the vital factor in securing markets is transport. If the means of communication are improved and speeded up and if an efficient marketing organisation is

¹ Rowntree, p. 1171.

created, Calcutta and the towns of Bengal and of the parts adjacent to it can provide large and stable markets to the delta, for its fruits and vegetables and for its poultry, ducks, geese, eggs, etc., for a large increase in the production of which conditions in the delta are very favourable. The Mohammedan and Christian populations of these towns provide a market for beef, and the Mohammedan cultivators of the delta can take up cattle-raising. It may be pointed out that the production of cattle for milk and butter only can be no more profitable than the keeping of poultry for eggs only or of sheep for wool only. The great sheep-breeding industry of Australia and New Zealand would not have succeeded, if a market for the meat and hides had not been available. The scarcity of fodder is, however, a difficulty in the way of the success of the production of cattle, and although, as explained later, the difficulty can be largely removed, it will remain to some extent, and therefore the increase in the wealth of the delta from this line of development cannot be very large in the near future. All these developments will require greater industry on the part of the cultivators, but it has been explained before that generally speaking they have too much leisure during a large part of the year, and hence they can put forth the required industry without any difficulty.

One important way of increasing the agricultural wealth of the delta is to pay proper attention to the manure problem, which, as explained before, has been hitherto neglected. Although a large part of the land of the delta is annually enriched by fresh deposits of silt, there can be no doubt that better manuring will considerably increase its productivity, and it is even more essential for the area of the old alluvion, which, being above the flood level, is not fertilised by silt deposits. The quantity of the available farm-yard manure can be considerably increased by avoiding the present waste of the dung and urine of cattle and the use of the dung as fuel. Landlords should plant, as explained later, rapidly growing trees

on their estates, and should allow their tenants to take away fuel therefrom for their own use at a small charge on condition that they desist from using cattle-dung as fuel and use it as manure. Also the quality of this manure can be greatly improved by correct methods of conservation, because it is found that farm-yard manure prepared by cultivators contains much less nitrogen than that prepared on experimental farms. This manure should be supplemented by artificial manures, oil-cake, green manuring, night soil and town sweepings. The use of the first three will be profitable in the case of the more valuable crops such as jute, sugar-cane, tobacco, and market gardening, but it may also pay in the case of winter rice. The last two sources of manure are available mainly near towns and their cost is small, but the cultivators are most unwilling to use them on social grounds. If their objection can be overcome, the solution of the manure problem will be considerably facilitated, because the cultivators of Japan have solved it by an extensive use of night soil.

Another important way of increasing the agricultural wealth of the delta is to introduce superior varieties of seed, which will enable the cultivators to obtain larger crops, without extra expenditure or change of methods. The Department of Agriculture has begun to supply the cultivators with better paddy and vegetable seeds, sugar-cane cuttings, and jute seeds, especially of the Kakya Bombai variety, the last being grown by special arrangement on the estates of Bihar indigo planters and on the Assam estate of Messrs. Birkmyre Bros.. The raiyats have recognised the value of these seeds, especially of jute seeds, and the demand for the latter is large, but the supply so far has fallen short of it. Consequently, the price of these seeds has increased considerably. Moreover, unscrupulous dealers have begun to advertise inferior seeds as Government seeds and to sell them to unsuspecting raiyats at high prices. When the latter find that their crop is inferior, they become disappointed

and disheartened and lose confidence in the Agricultural Department, which is thus most unfairly brought into discredit.¹ It is difficult to prosecute the dishonest dealers, and the only way of meeting the evil is to make available a large supply of seeds of guaranteed quality and race. It is necessary, therefore, that the Department should raise the better varieties of seeds not merely of jute but also of the other crops grown in the delta, on its own farms and on rented lands. It is desirable that ultimately the seed industry should be organised on purely commercial lines entirely by private effort, but the Department will have to lead the way. Private effort, however, must co-operate with the Department in this matter from the very beginning, because the demand for seeds cannot be fully met by the latter even if it were to do its best in the matter. But private enterprise must be properly organised and at first must be under the supervision of the Department. At present the Department is mainly dealing with individual cultivators and endeavouring to make them themselves do the multiplication of the seeds. To this end, through the panchayets, some cultivators are presented with small quantities of seeds on their promising not to cut the resulting crop until the seeds ripen. But it is found impossible to keep a check on the seeds after they have been distributed; and thus a large quantity of them is either lost or deteriorates quickly through admixture with inferior varieties. It is therefore necessary to establish in the delta private seed farms, which have proved quite successful in other parts of the country.

A few such farms have been started lately, but they should be established in larger numbers by Zemindars, the Court of Wards, Khas mahals and agricultural associations of villagers. Some Zemindars in other parts of India have

¹ Cf. Appendix II, Proceedings of the Second Conference of the Board of the Agricultural Department held in August, 1921, p. IV.

realised the great importance of good seeds and have established seed farms, from which they supply seeds to their tenants. Even in the Rajshahi district in North Bengal some prominent Zemindars have established such farms with the assistance of the Agricultural Department. There is no reason why Zemindars in the delta should not come forward to undertake this work in the interests of their tenants, especially as it will ultimately benefit them also. Again, the cultivators themselves are beginning to realise the importance of the matter, are organising village agricultural associations, and are considering the opening of farms for the propagation of seeds at first supplied by the Department, to meet the requirements of the members. Agricultural associations have existed in parts of the delta for some time. A few of them have done good work, but this cannot be said of the majority of them. For remedying this condition, a movement has been started to organise co-operative agricultural associations, and a few such associations have been formed in Pabna, Mymensingh and Dacca. They have raised their own share capital, and their main object is the raising of seeds of new varieties of crops and the sale of purchased special seeds and manures to their own members and also to outsiders. They must be formed in far larger numbers and must be properly organised, if they are to produce any appreciable effect. The best system seems to be to register a group of agricultural associations as an agricultural society under the Co-operative Act. If this is done, each society will have to raise a certain amount of share capital from its members, on the security of which it will be able to borrow money at a reasonable rate and to open a seed farm on land purchased or rented on long lease.

All the private seed farms, whether owned by zemindars, Courts of Wards or agricultural societies should provide their own staff and be run on business lines, but it is essential to keep them in close touch with the Agricultural Department,

which should endeavour to impress on their owners the necessity of preserving the purity of the seeds and of establishing a good name, as their success will depend upon unremitting care and commercial honesty. They should obtain pure seeds from government farms and propagate them under the supervision of the officers of the Department, who would advise them regarding the varieties grown and the best methods to be adopted. Moreover, the purity and germinating power of the seeds should be guaranteed. Deterioration through crossing is not important in the case of jute as in the case of paddy, because jute is ordinarily self-fertilised. However, the adulteration of jute seeds by mixing inferior seeds with the improved ones is easier than that of paddy seeds. Officers of the Department, therefore, should inspect seeds and issue a departmental certificate guaranteeing their purity of type and germinating power. Such a certificate will enable the seed farms to obtain a better price for its seeds. If this scheme is properly developed, it will become ultimately necessary to establish a separate seed-testing branch of the Department. For the distribution of seeds after their reproduction, the existing Government seeds stores will have to remain for some time, but as private seed farms develop, their owners should be induced to make arrangements also for the distribution of the seeds. In addition to the work outlined above, the Department must develop further the research and experiments which its officers—the Fibre Expert for jute, the First Economic Botanist for paddy and the Second Economic Botanist for cotton and their assistants—are conducting at the Central farm for the discovery of new, and the improvement of existing, varieties of crops. Important results in this direction have been already secured by the Department by means of patient and systematic research work. The variety of jute known as Kakya Bombai, which yields on the average three maunds more of fibre per acre than the best local variety, is one such

result. More recently, two varieties known as R 85 and D 154 have been produced, which can yield on the average one and a half maunds more of fibre per acre than even Kakya Bombai. In respect of paddy, two varieties, one transplanted winter variety called Indrasail, and the other a high land autumn variety called Kataktara, have been produced after the critical examination and scientific investigation of more than 2000 varieties extending over five years. Again, considerable research work is being carried on for producing improved varieties of pulses, mustard and rape, and for finding out the possibilities of cotton as a spring crop. When such crops are discovered, their practical utility must be demonstrated through the agency of demonstrators before cultivators can be expected to take them up. Moreover, it is necessary to emphasise the desirability of testing and proving the utility of any improved variety of seed in a particular area before its reproduction on seed farms is attempted.¹

The advantages from the use of improved seeds will be considerable especially in the case of jute. Their use will enable the cultivators to obtain a greater yield of superior quality per acre. It has been explained before that for a couple of years after the War the cultivators were compelled to sell their jute at low prices. But this was mainly true of the jute of poor quality grown from ordinary seeds, and good jute grown from the improved seeds supplied by the Agricultural Department has always been sold at good prices, yielding a good profit to the fortunate few. Quality in jute depends mainly on length, strength and colour, and on the proportion of the length which is free from adherent bark, often to be found at the butt end of the strand and known as root. The longer the strand of fibre, the less is the proportion of root, and the higher therefore is the value of the fibre. The jute grown from departmental seeds grows to a greater

¹ Cf. The minutes of the Conference of the Agriculture, Industries and Co-operative Departments, Bengal, held in July, 1922, p. 19.

height than that from ordinary seeds, yielding a longer strand, a less proportion of root and therefore a more valuable fibre. In addition, it is superior on the whole in the other three factors determining quality, and therefore jute dealers offer much higher prices for it. The large difference between the top and bottom prices of jute is the result of the shortage of good jute and the abundance of poor jute. It is true that the cultivators cannot expect to obtain in future Rs. 20 per maund for jute of good quality, because with the increase of supply the price will come down, because the season for the cultivation of jute is not always favourable, and because the market for the fibre is a fluctuating one. But it is very probable that in the near future most cultivators will, in normal years, be able, with the use of improved seeds and by careful cultivation and work, to produce a fibre, which will fetch about Rs. 10 per maund, and which will still yield a good profit to them. It is necessary, however, to emphasise that a good price cannot be obtained for jute unless it is carefully prepared. This may mean for a cultivator growing jute on a somewhat less area, but even so his profit will be larger, because the reduction in the amount produced will be more than made up by the higher price obtained for it.¹ Finally, it may be pointed out that the cost of improved seeds is a comparatively small item in the expenses of cultivation.

For increasing the agricultural wealth of the delta, it is also essential to deal with the problem of cattle improvement both in quality and quantity. The most important causes of their deterioration have been a want of proper care, a lack of good breeding stock and a shortage of fodder. As regards the first, a raiyat can have no incentive to take better care of an animal, which barely gives him one seer

¹ Cf. Mr. Finlow's Article on 'Historical Note on Experiments with jute in Bengal,' in the *Agricultural Journal of India*, Vol. XVI, Part III.

of milk per day during seven months in the year,¹ *i.e.*, the period of lactation, or which is inefficient for work in the fields. If he has better animals, he is shrewd enough to understand that it will pay him to take better care of them, and experience shows that he actually does so. The problem of the provision of good breeding stock cannot be solved by private enterprise, because the business cannot be made to pay for some years, and until this happens private enterprise will not be forthcoming in the delta. The Department of Agriculture, therefore, should establish cattle farms, one in each district, such as the one which already exists at Rangpur in North Bengal, and after having made them commercially successful, should hand them over to private concerns. Experience of the Rangpur farm shows that, while the local cattle may with judicious breeding and proper feeding be improved considerably within a comparatively short time, the much quicker process is to cross the local cows with imported bulls of good pedigree and superior strain.² Moreover, hitherto perhaps too much stress has been laid on the improvement of cattle for draught purposes, and the value of improving the breed of milch cows has been perhaps somewhat overlooked. The aim must be to evolve a breed, of which the males will be better plough bullocks and the cows better milkers. Thus, in selecting bulls for the production of breeding stock, close attention must be directed to their size, their milk-yielding and draught capacities, their power of adapting themselves to local conditions and their power of stamping upon their progeny those desirable characteristics for which they are valued. For the proper organisation of the whole work, a cattle-breeding expert with wide experience in India and other countries should be appointed.

¹ This is the average production of milk per cow in Bengal. See Blackwood's Survey and Census of the Cattle of Bengal.

² Cf. the minutes of the Second Conference of the Agriculture, Industries and Co-operative Departments, Bengal, held in July, 1922, p. 23.

In addition to the supply of suitable breeding bulls, the Department of Agriculture will have to endeavour to induce rural cattle-owners to use them for covering their cows. It will be a tedious business to convince them of the ultimate value of good draught and milch cattle, because in all breeding experiments a number of years must pass, before any substantial improvement or return can be expected, but the importance of the problem must be impressed upon the minds of the cattle-owners. Those living in the neighbourhood of the cattle-farms should be conducted round them at intervals to show them the good results already obtained, and everything possible should be done to encourage them to come to the farms and to see the developments for themselves.¹ They should be induced to bring their cows for being covered, and no fee should be charged at first for the services of the bulls. For the benefit of the cattle-owners living away from the farms, the District Boards should obtain bulls from the farms and maintain them at different centres with the assistance of the Civil Veterinary Department. The Co-operative Department should encourage the formation of co-operative cattle-breeding societies, which should obtain bulls from the Government farms and maintain them for the use of members and non-members, the latter paying a small fee. If the larger landowners and the more prosperous cultivators can be induced to join such societies, good results will spread rapidly, because they will forcibly and practically demonstrate to all the cultivators in the neighbourhood the value of improved breeding of cattle. The bulls maintained by the societies must be properly cared for and fed, as even pedigree stock will not produce good results, if they are half-starved and are kept under the present miserable conditions found throughout the delta and they must on no account

¹ Stud bulls of the famous Red Scindi and Montgomery milking breeds are now being placed on the Government farms and their services will be available to the cattle-owners in the neighbourhood.

be used to excess. For the same reason the cows must also be properly looked after, and the heifers should not be served until they are three years old.

As regards the shortage of fodder, it has been suggested that the cultivators, zemindars, talukdars, etc., should be compelled by legislation to set apart a portion of their land for pasture.¹ It will be, however, impracticable to enforce any such legislation effectively, because it pays better to grow paddy or jute, and this is the reason why, as explained before, all pasture land has gradually been turned into arable land. The suggestion that the cultivators should be induced to grow fodder crops instead of paddy or jute on a part of their land seems also to be impracticable, because they will not do so unless they are convinced that the former pays them better than the latter, which cannot be true. The practical solution of the problem appears to be that far more attention should be paid than has been done hitherto, to the growing of fodder crops as spring crops after the winter rice or jute crop has been cleared away. The Department of Agriculture should find out the kinds of such crops that will be most suitable in the delta. Secondly, recent experimental work has demonstrated the existence and importance of vitamins in the diet of animals, and the addition of quite a small quantity of the right class of green fodder to the rice straw ration may appreciably leaven the whole. The study of the value of different green crops for mixing purposes may thus yield valuable results. If the amount of green fodder required is small enough to permit its being grown by tank irrigation, there need be no great difficulty for most cultivators in keeping a very small patch of lucerne or some such fodder going all the year round for the sake of the cattle. Finally, the supply of fodder should be better distributed during the year by the construction of silos or receptacles for

¹ Cf. the Proceedings of the Second Conference of the Board of the Agricultural Department, Bengal, p.12.

storing silage or ensilage, *i.e.*, green fodder which is preserved in a succulent and palatable form from the time when it is not scarce, so as to be available for use during the dry and hot season when green fodder of any kind is very scarce.¹ A silo must be air-tight and damp-proof and for this reason it will be necessary in the delta to build it above land-surface on account of the high water level and damp soil. In dryer parts of India, it has been found practicable to make excellent silage in water-tight pits underground. It is true that cattle do not like silage at first, on account of its peculiar sweetish smell, but if small quantities of it are mixed with straw, the animals become used to it in a few days, and afterwards they eat it with relish even when the quantity is increased.

For the solution of the cattle problem it has been often suggested that the slaughter of cattle for food should be prohibited on the ground that the slaughter accentuates the present shortage of cattle for draught and milk.² But, the stoppage of the slaughter of cattle far from helping in the solution of the problem of cattle improvement will discourage the growth of the cattle-breeding industry by reducing the demand and the market for its products. It is a commonplace of economics that the development of an industry is promoted most by securing the widest and best market for its products, and the industry in question is no exception to this rule. If the slaughter of sheep were to be stopped in Australia or that of cattle in Canada, there is no doubt that the sheep and cattle raising industries in these countries would almost disappear. The supply of a commodity cannot improve either in quantity or quality if the market for it is restricted, and in this respect cattle are

¹ A silo has proved very useful on the Rangpur cattle farm. See Bengal Agricultural Journal, Vol. II, No. 1, p. 16.

² Cf. The minutes of the Conference of Agriculture, Industries and Co-operative Departments held in July, 1922, p. 28.

exactly in the same position as any other commodities produced to satisfy human wants. The consumer may gain and the producer may lose temporarily by restricting the market, but when the latter adjusts the supply to the new conditions, the former is adversely affected. In addition to these general considerations, there are some special ones in the case of the cattle-breeding industry on account of the fact that, as it has to deal with a living factor over which man has only a limited control, the risks of failure and loss are greater than in most other industries. To improve the quality of cattle it is necessary to conduct costly experiments with bulls and cows specially selected either within the delta itself or from the outside, and unless a cattle farm works on a large scale, the failure of an experiment or the death of some costly bulls may mean such a heavy loss as compared with the total working capital of the farm, that it may have to shut up its operations. Again, standardisation of output cannot be secured in this industry as much as in most industries, and allowance must be made for varying output, which sells at varying prices, although its cost of production is the same. Further, allowance must be made for the greater risk of loss arising from the death of animals produced for sale, owing to an epidemic or other causes. All these factors require production on a large scale for the success of the industry, but such production in its turn requires a wide and unrestricted market. These factors also require that the price charged to the consumer should be higher in proportion to the cost of production in this than in ordinary industries. But in the interests of the consumers and ultimately of the producers also, it is essential that the price should be as low as possible, and that there should be a rapid improvement in the quantity and quality of the cattle raised on the farms. This can be best secured by competitive production, which is most facilitated by a wide and unrestricted market. Further, as seen above, a good market is most desirable from the start

for the development of cattle-breeding, but it would be difficult to secure such a market in the beginning, because the cultivators owing to their very limited resources and conservatism, would be reluctant to go in for better cattle until they are convinced of their value. Therefore, every thing that is possible should be done to keep the market fully open and unrestricted and to allow free play to the forces of competition, and this, again, makes the prohibition of the slaughter of cattle economically unsound. Even in the long run the freest and widest market would promote most the industry of cattle breeding and the interests of consumers and producers. In some other parts of India, in addition to the prohibition of the slaughter of cattle, the prohibition of their export has been advocated, for the solution of the cattle problem.¹ This argument does not apply to the delta, because far from being able to export cattle, the delta has to import them, and conditions are not at all likely to be favourable, at least in the near future, for their export, because the increase in their production cannot be rapid on account of the difficulties mentioned before, and because the increase that takes place would be required by the delta itself. But, if the export were to become a practical proposition, the same considerations would apply to it, as those mentioned above in relation to the question of the slaughter of cattle, and unhampered export should be permitted in the interests of securing the freest and widest market.

For increasing the agricultural wealth of the delta, the problem of uneconomic and fragmented holdings must also be faced. A number of European countries and Japan have endeavoured to solve it by means of drastic legislation involving compulsory expropriation, compulsion of all landholders to accept a consolidation of their holdings, when a certain proportion of them want it, and in some cases even without

¹ Cf. Prof. P. C. Basu's paper on the Problem of Cattle Improvement in India, read at the Lahore Economic Conference, 1923.

the desire of any of them, prohibition of subsequent division of the consolidated holdings and prohibition of raising loans on the mortgage of such holdings and their consequent exemption from seizure for debt.¹ Such compulsory legislation has been found very beneficial in these countries, but it is hardly practicable in the delta. The cultivators of the delta have hitherto enjoyed a large amount of liberty regarding the disposition of their rights in land, they are not yet prepared for any large measure of compulsion, and attempts at present to coerce them against their traditions and sentiments would not only arouse determined opposition, but would probably also serve to defeat their object. Legislation, if resorted to, must be mainly permissive, and compulsion must be reduced to a minimum.

It is not possible to increase the size of those holdings, which have become uneconomic, except by compulsory expropriation, which is not practicable in the delta. However, as mentioned before, most of such holdings can be made economic, if their scattered portions are consolidated, and if they are more intensively cultivated. The consolidation of fragmented holdings is the crux of the problem. Considerable progress has been made in this direction in some villages of the Punjab by the organisation of co-operative societies of landholders for the consolidation of their holdings under the fostering care of the Co-operative Department.² Similar means should be employed in the delta, and for their success the active support of the landlords is essential. Such societies will have the best chances of success only in those villages in which co-operative credit societies have worked well for some time. For, it is the co-operative spirit, the spirit of mutual help, which seeks the good of each through the good of all, and which accepts a little sacrifice for the common

¹ Cf. Keatinge, *Agricultural Progress in Western India*, p. 73.

² Cf. Mr. Calvert's article in the *Indian Agricultural Journal*, Vol. XVII, Part I, and his paper submitted to the Lahore Economic Conference, 1923.

good, that alone can make a consolidation of holdings possible. A scheme will be suggested later for accelerating the formation of credit societies under the care and guidance of a trained and much larger staff of the Co-operative Department, and as these societies are established and work successfully, the officers should preach to the cultivators the advantages of consolidating their scattered holdings by co-operative means. When all the cultivators of a village or a part of a village grasp the idea thoroughly, express a desire to have the whole or a part of their holdings repartitioned and consolidated, and agree to the qualities of land which they wish to be consolidated, they should be formed into a co-operative society for the consolidation of holdings, and each of them should be asked to point out on the village map the spot where he wishes to have his land. At first they will offer for consolidation only a part of their holdings of a more or less uniform quality throughout, and further portions will be offered only if the earlier work proves successful. The officers of the Co-operative Department, with the assistance of those of the Agricultural Department, should then proceed to work out more or less compact blocks of land so that each cultivator will have his land round the chosen spot as far as practicable. This will require much adjustment and compromise, but as the advantages of consolidation are more and more recognised by the cultivators, their desire for it will predominate over their desire for having their land round particular spots, and minor differences will disappear. Frequently it will be necessary to give to each cultivator a number of blocks instead of one, but the consolidation will be very advantageous in so far as the number of strips of land will be considerably reduced. The work of repartition may take considerable time, but the trouble will be fully repaid by the gains that will be secured. After the repartition has met with the approval of all the cultivators concerned, the sanction of the landlord to it should be obtained, any readjustments that may be required

by him should be made with the consent of the cultivators, and finally the revenue authorities should be requested to sanction and record the re-partition.

The task cannot be easy and obstacles will have to be overcome. The idea is new and the conservative cultivators dislike any change. Occupancy tenants, possessing special rights in particular plots, will be afraid of losing them. Widows may consider the exchange very risky, and may think that their male neighbours will gain at their expense. The interests of minors will have to be protected carefully. Many of the best plots will be under mortgage to money-lenders, who may give trouble, and who will demand equally good land in return. Difficulties may arise from differences in the quality of land. And finally all the cultivators will have to be satisfied at the same time, before the revenue authorities can sanction the repartition. But these difficulties are not insuperable. The cultivators are realising more and more the magnitude of the loss that results from the fragmentation of their holdings, and if the officers of the Co-operative Department, with the assistance of the landlords, are able to convince them of the practicability of a re-partition of their land which will benefit them all, the difficulties will gradually melt away before the desire for consolidation. Such has been the experience in the Punjab, and there seems to be no reason why it should be otherwise in the delta.

However, a minimum of compulsion may become necessary in certain cases. Thus, it has been explained before that even a small minority of tenants can altogether prevent the consolidation of fragmented holdings in an estate, even if the vast majority of them as well as the landlord desire it. Again, consolidation will be blocked when the lands of one estate are mixed up with those of another, if the landlord of the other estate or his tenants concerned object to such consolidation. It may become necessary to empower the courts by legislation to permit consolidation to be carried out in

such cases on the application of the landlord or tenants desiring it in spite of the opposition of the minority. To prevent hardships to this minority, however, the courts must ensure that those tenants, who prefer to have their occupancy rights bought out by the landlord at a fair valuation, have their desire satisfied, that compensation is given to the other landlord if his interests are in any way adversely affected by the consolidation, and that the body carrying out the redistribution of fields consists of thoroughly impartial persons, who have no interest in the estate which is to be consolidated, and who do not yield to any influence or pressure that may be exerted by interested persons. Such persons can be easily found among the superior officers of the Co-operative and Agricultural Departments.

This consolidation of holdings cannot be permanent unless their sub-division and fragmentation by the future generations under the law of equal inheritance are prevented. A general change in the law of succession from equal partition to primogeniture is quite impossible. But in 1916 a bill was drafted by Mr. Keatinge to enable prudent landholders in the Bombay Presidency to constitute permanent economic holdings not subject to partition, if they wished to do so. For several reasons, the bill could not be brought before the Bombay Legislative Council, but the scheme embodied in it was as follows: In order to be constituted an economic holding, a holding had to be entered as such in one name only in a register after the collector had ascertained by holding a careful enquiry the willingness of all persons interested in the land to the registration. Thereafter, the holder could not divide the holding or dispose of a part of it, but might sell, mortgage or otherwise dispose of it as an entire unit. On the death of the holder, if he had not disposed of it by will to a single person, it was to devolve upon a single holder. The holder could have got the registration cancelled with the

consent of the collector on certain grounds.¹ The bill was thus merely of a permissive nature, and a similar bill with the necessary modifications may be enacted into law in Bengal, but it is doubtful whether its provisions will be utilised even by an appreciable number of the cultivators of the delta in the near future, as the attachment of all of them to their ancestral land is exceedingly powerful. However, although it may not be practicable to secure a permanent consolidation of holdings, even a temporary consolidation lasting for one or two generations will considerably increase the agricultural wealth of the delta, and the holdings can be re-consolidated when they become re-fragmented.

It has been explained before that it is essential to remove the danger of a set-back to agricultural progress in the delta from the spread of the water-hyacinth pest, by eradicating it. Concerted action for this purpose by all the parties concerned is absolutely essential ; the weed spreads so quickly that any person, who fails to act at the same time as his neighbours, will undo the work of eradication over the entire area, as the presence of the weed on his holding will act as a centre for re-infection. Thus, the District Board of Bakarganj has spent a substantial sum in removing the weed, but its efforts have proved useless on account of the apathy of some of the cultivators in the areas concerned. Again, in 1920, the Collector of Dacca instituted a campaign against the pest in his district through the medium of the President Panchayats. In many Unions the work was taken up with zeal, but the lack of it on the part of the neighbouring Unions undid their work completely in a short time. Therefore, concerted action can be secured only by legislation which enforces penalties. This is the opinion of all the District and Union Boards throughout the delta and also of the Water Hyacinth Committee, which was appointed by the Government of

¹ For details see the draft bill and statement of objects and reasons, Appendix III, *Agricultural Progress in Western India*.

Bengal in 1922. Therefore, firstly, after a certain date, water hyacinth should be declared a public nuisance, and any person floating or in any way removing any water hyacinth from the land or water in his possession to the land or water of another person without his consent or removing it to public water, tidal rivers and water-channels, should be declared guilty of having committed a public nuisance as defined in the Indian Penal Code and made liable to a fine. Secondly, a District Board, Collector, Municipality or any local authority should be empowered by law to serve on the owner or occupier of any place within its jurisdiction a notice requiring him to destroy before a specified date the water hyacinth existing in such a place, and on his failure to comply with it, to enter upon the place and to take all the measures necessary for the destruction of the weed without being liable for trespass or for injury to crops, pasture, fishes, etc. The entire cost of carrying out such measures or a reasonable proportion thereof should be recovered from the owner or occupier concerned, as if they were arrears of public demand, by the sale, if necessary, of the property on which the nuisance existed, the owner or the occupier possessing the right of appeal to the Commissioner of the Division whose decision should be final.

After the plants are collected and brought to dry land, they can be destroyed by one of two methods. Either, they should be thoroughly dried in the sun and then completely burnt or they should be buried in a deep pit and covered by at least one foot of earth. Shallow burying must be avoided, because a flood may wash out the plants and spread them again. If they are buried for 3 or 4 months, they rot and form a valuable manure, especially for jute and garden crops. The ash of the burnt weed is also a valuable potassic manure, as it is far richer in potash than wood ashes. The most suitable time for these operations is the hot season, *i.e.*, March to May, as at this time the plants wither away and can be collected,

dried and burnt easily. The first collection should be made in March and the second in May. In the latter month, the plants, which escape the first collection, sprout and therefore can be easily detected and collected. Great care must be taken not to leave a single plant alive, because it will spread rapidly and infest the whole land again in a short time. At present, the majority of the cultivators, who may be troubled with hyacinth on their land, merely push it into the nearest waterway hoping that it will reach salt water and die there. This practice is most harmful, because the weed generally finds its way to a neighbour's land further down the stream and infests it.

As regards the economic utilization of the plant so as to reduce the cost of destroying it, in addition to its use as manure, potassium salts can be extracted from it by a simple process. Further, the green plant can be utilised as fodder for cattle at those times when there is a scarcity of fodder. As a matter of fact, the cultivators do use it to some extent for this purpose during the flood season, and cattle seem to like it, because they may be seen wading into knee-deep water in order to graze on it. It may not be quite suitable for feeding by itself, as it is not rich in nitrogenous content, and contains too high a proportion of alkali salts, but the possibilities of using it mixed with other fodder as food for cattle on a larger scale should be investigated, especially as the fodder problem, as explained before, is somewhat acute in the delta. Finally, the dried hyacinth can be used as fuel, the ashes being subsequently used as manure.

All these improvements in cultivation will keep the cultivators much more occupied during the year than they are now, but they will not keep the majority of them fully occupied. For a substantial increase in their earnings it is

¹ See Mr. Mclean's note, Appendix IIIa, Report of the Water Hyacinth Committee.

essential that they should be so occupied, and that their labour should find full scope for it, of course allowing for the necessary rest and recreation. Some subsidiary occupation is therefore necessary for those, who would still have spare time at their disposal, and this occupation would be afforded by the charka or the spinning wheel. Mr. Conborough has shown conclusively that the spinning of cotton yarn by hand can hardly yield the barest subsistence wage, if it were to be any one's sole occupation, on account of the competition of machine-made yarn.¹ But as a subsidiary occupation, it would appreciably augment the income of a cultivator, especially if his family also, in addition to himself, takes it up. Recent experience has shown that the people of the delta have an aptitude for this work, and that after some practice, they rapidly acquire the skill necessary for the production of fine and even yarn, and as the delta itself has a substantial weaving industry, it will be possible to dispose of the handspun yarn to the weavers of ordinary cloth without any difficulty, provided that the quality of the yarn is good. It is true that at present most of the weavers of the delta use foreign machine-made yarn, and that at first there would be some difficulty in inducing them to use handspun yarn. But, provided that the quality of the latter is good, and that it is sold at a price which compares favourably with that of machine-made yarn, it is very probable that the initial difficulty can be soon removed. The Departments of Industries and Agriculture should therefore encourage cultivators to introduce the spinning-wheel in their households and should recommend to them the best and cheapest type of wheel, the best cotton available for spinning and the home cultivation of cotton. Co-operative Credit Societies should be encouraged to make loans to members for purchasing the wheel and raw material. Organisations on

¹ Note on Indian Piece-Goods Trade, Bulletin of the Department of Industries, Government of India, 1922.

co-operative lines may also be started for the purchase of raw material and the collection and disposal of the yarn.

The prospects of increasing the agricultural wealth of the delta by extending the cultivation of crops, which are of minor importance in the delta, but which are very profitable in some other parts of India and form a substantial part of their resources, may now be considered. Sugarcane is one of such crops. A little less than two decades ago it was much more important in the delta than it is now, but at that time it received a set-back, from which it has never recovered, from jute, which began to be more profitable and which is easier to grow and gives a quicker return.¹ Since 1911 the area under sugar-cane has remained practically stationary, amounting to less than one per cent. of the net cropped area and consisting of small and isolated patches. There does not appear much prospect of a considerable revival or expansion of cane cultivation, so long as jute continues to be very important in the fibre markets of the world, and so long as the delta retains the largest share of the monopoly of growing it, that is enjoyed by the Province of Bengal. Moreover, the low-lying area subject to inundation is not suited to the cultivation of the better varieties of cane. It is noticeable that in spite of the stimulus afforded by the recent rise in the price of gur and sugar, there has been no considerable extension of cane cultivation, although the cultivators have long been acquainted with the cultivation and are shrewd enough to extend it if it pays them to do so. For these reasons, as well as on account of the difficulties of communication in almost every district, it is improbable that a factory industry can be established or that the cottage industry of gur-making can be much developed. Hence, improvement can take the form only of improving the cultivation that takes place in small and

¹ Cf. B. C. Basu's Report on the Sugarcane Industry of Eastern Bengal and Assam, 1907, p. 6.

scattered fields.¹ Even in this respect the possibilities of improvement are not considerable in the area below the flood level, because there is not much prospect of improving the thin canes with low sucrose content, which are the only varieties capable of withstanding the waterlogging to which such an area is subject. However, there is more scope for improvement in the area above the flood level, which has proved suitable for growing thick canes of select varieties. The Agricultural Department has already done some work in this connection, but as pointed out by the Sugar Committee the greatest need is to carry out a botanical and chemical survey of the different canes already being grown, leading to their classification and the isolation of pure line cultures, as this will enable the Department to find out the particular varieties which may be most suited to particular localities and to suggest a better distribution. The trials which the Department is making with superior exotic varieties should also be continued in order to find out whether any of them can be grown in the delta without losing their original superiority to the best indigenous canes. Moreover, the Department should conduct manurial experiments in order to find out the manures that may be most suited to local conditions and the best dose for each variety. As the survey, trials and experiments prove successful, it is necessary to bring home to the cultivators the great importance of the selection of the most suitable varieties and of the proper application of manures, by means of actual demonstrations on Government farms.

Another crop, which has no importance in the delta, not being grown as a field crop at all, but which forms a substantial part of the resources of some other parts of India, is cotton. It has been mentioned before that until the decline of the famous Dacca cotton industry, which commenced from

¹ Cf. the Report of the Indian Sugar Committee, p. 90.

the beginning of the last century, all the cotton required for it was grown locally. At present no cotton is grown in the delta as a field crop. Sometimes one hears of cotton being grown, but enquiries show that tree cotton is meant. Single bushes are grown on the raised land surrounding the homesteads and yield a certain quantity of fibre, which is chiefly used for making the sacred thread of the Hindus. Numerous and detailed experiments costing a great deal of time and money have been made by the East India Company, the Agricultural Society of India, individual European planters, the Bengal Government, the short-lived Eastern Bengal and Assam Government and others for the re-introduction of cotton as a field crop in the delta.¹ The experiments have been complete, as all the varieties grown not merely in other parts of India, but also in other cotton growing countries of the world have been tried, but no success has been achieved. The main reason seems to be that the climate and natural conditions of the delta are not suited to this crop. All the main cotton growing tracts of the world are regions of comparatively low rainfall, and in some of them, as in Egypt, irrigation has to be depended upon. The rainfall in all the chief cotton producing areas of India, *viz.*, the Deccan, Guzerat, Berar, Central India and the Punjab, is not more than 35", and the best cotton soils are well-drained. In the delta, on the other hand, the rainfall is in the neighbourhood of 80", and natural drainage being defective, the soils waterlog, and the more or less complete control of the water supply, which is essential for successful cotton growing, cannot be secured. It is therefore natural that all past endeavours to grow cotton as a monsoon crop should have ended in failure. Consequently, the cultivators have paid no attention to it, especially as they

¹ For a history of the experiments see Mr. Evans' Paper on 'A Brief History of experimental cotton cultivation in the Plains of Bengal,' Bulletin No. 1 of 1921, of the Department of Agriculture, Bengal.

are occupied at this time of the year with the paddy and jute crops.¹ However, efforts to grow it as a cold weather crop may be more successful; for, firstly, it can then receive greater attention from the cultivators, who have then plenty of time to spare; secondly, better control of the water-supply will become possible; thirdly, the temperature never falls so low as to injure the cotton plant; fourthly, there will be less danger of damage from insects, as the plants will come into boll in February and March, when the sky is more or less clear; and lastly, if light irrigation becomes necessary in any year on account of the failure of the winter showers, it can easily be supplied from bils or tanks. Mr. Taylor in his *Topography of Dacca* (1840), Mr. Dearman, Deputy Collector at Dacca in his letter to the Secretary of the Agricultural Society of India (1839) and other writers mentioned that at that time whatever cotton was grown, was chiefly grown as a cold weather crop. Experiments on these lines made on the Manipur Farm near Dacca during the cold weather have proved fairly successful. It must not be supposed that even as a cold weather crop, cotton can be grown in the delta on a commercial scale, but it is probable that in this way the cultivators will be able to produce sufficient cotton for themselves for plying the charka or the spinning wheel during the slack season,—a method which has been suggested before for supplementing the income of the cultivators from agriculture. Therefore, it is to be hoped that the experiments at Government farms would be continued, that varieties suited to the different parts of the delta would be discovered, and that the cultivators would be induced to take to them by means of demonstrations of their practical success on the farms.

A third crop, which has little importance at present in the delta, is the potato. Its cultivation requires to be extended very much, because it is desirable that it should

¹ Cf. the Report of the Department of Agriculture, 1921-22, p. 5.

become a staple article of diet in the delta. In order that greater exertion on the part of its people needed for raising the standard of production may become possible, an improvement in their diet is necessary, and it would be far easier to make it take the form of potatoes, a little meat and more and better vegetables than of milk and its products. The idea prevalent in India that the latter are necessities of life is disproved by Japan, where they are above the means of the mass of the population. Most people in the delta would find it hard to accept the idea of the potato becoming a staple article of diet. In Europe at first there was the same prejudice against it, and even the poorest could hardly be induced to take to it,¹ yet now, without the potato, Europe would almost be reduced to starvation. If it becomes a common article of food in the delta, there would be food for all and a considerable saving of land, which can be used for growing other crops to be exchanged for other commodities, because its yield is very heavy. It seems practicable to grow this crop on a large scale in the delta.² The main difficulty appears to be in connection with the supply of good seed. To meet it, the Agricultural Department should establish a small potato farm near Darjeeling, where the crop can be properly grown during the monsoon, and good seed made available to growers for eventual distribution to the cultivators.

¹ Cf. Clapham, *Economic Development of France and Germany*, pp. 22 and 51.

² This is the opinion of the officials of the Agricultural Department also. Cf. the Report of the Department for 1921-22, pp. 9 and 22.

CHAPTER XI

REMEDIES : THE LANDLORD AND TENANT SYSTEM, CO-OPERATION AND LOCAL ADMINISTRATION

In the work of increasing the agricultural wealth of the delta explained in the preceding chapter, the landlords can, and ought to, play an important part, which will greatly benefit them, their tenants and the delta generally, and which will justify their existence as landlords by making them useful members of society. For preventing the mismanagement of estates and the fomentation of useless litigation between the tenants and landlords and among the landlords themselves by their agents, it is essential that the landlords should live on their estates at least during the greater part of the year, that they should personally supervise and direct the work of their agents, that they should do their best to improve and develop their estates, that they should employ agents trained for their work in the way suggested below and pay them decent wages so as to make it unnecessary for them to prey upon the tenants and to minimise the temptation to do so, and that the sons of the landlords should receive an efficient and advanced education in estate management and scientific agriculture in an agricultural college, so that they may become quite fitted to undertake work of this nature.¹ The result will be that the rental value of the estates will gradually increase, the

¹ As there is no Agricultural College in Bengal, agricultural students from this province have hitherto attended the Agricultural College at Sabour. The Government of Bihar and Orissa, however, has decided now to close this institution. This means that the three provinces of Bengal, Bihar and Orissa and Assam, with a population, mainly agricultural, of nearly 90 millions, will be devoid of all facilities for receiving a higher scientific agricultural training. It is most essential to provide this training, and the most suitable centre for this purpose appears to be Dacca, which is the headquarters of the Department

exactions and mismanagement of the agents will cease, litigation will be reduced, the landlords will come into personal touch with the tenants, the relations between the two will gradually improve, as the tenants will appreciate the good work that the landlords will be doing, and as the latter will realize more and more that their own prosperity depends a great deal upon the prosperity of their tenants, their income will increase much more than their expenditure, and they will be able gradually to reduce their indebtedness and finally to establish a perfectly solvent position for themselves. It is true that this goal will take a considerable time to reach, but it is quite attainable, if there is a general awakening among the landlords regarding their duties and responsibilities as well as their interests, and if they pursue a steady and consistent policy along these lines.

The development and improvement of estates have two aspects, external and internal, and the landlords must pay attention to both. The external aspect is concerned with the access of estates to markets, obtaining water during the dry season from tanks or rivers which are outside the estates, and draining surplus water from the estates. First, as to the access to markets. Agriculture in the delta, as explained before, is becoming more and more commercial, that is, an increasing portion of the yield of the land is being sold in more or less distant markets, the cultivators buying their necessities with the money obtained in this way. It is in the interests of both the landlords and tenants that such crops should be grown as are suited to the soil and climate, and the prosperity of both depends upon the facilities available

of Agriculture, and which possesses the Central Government Farm, the biggest farm in Bengal, and also a University. The Act establishing the Dacca University has provided for a Faculty of Agriculture, which, however, has not been established for lack of funds. It is essential that courses of lectures and practical training leading to the Degree of Bachelor of Agriculture should be provided by the Dacca University in co-operation with the Agricultural Department and the Central Farm, as soon as possible, and that the Government of Bengal should provide funds for this very important object.

for the disposal of the commercial produce at the highest possible prices. Much greater progress in this direction may be expected and is indeed required in the future, and it may become advantageous to some cultivators to sell almost the whole of the produce of their land and to purchase all their requirements.¹ Therefore, the landlords should pay close attention to the problem of improving the communications of their estates with the markets of the country by rivers, roads and railways. The landlords should study the position of their estates in respect of rivers, main roads and railways; they should endeavour to induce the District and Union Boards to construct roads connecting their estates with main roads or with rivers, which do not dry up during the summer months, or with railway stations; if their estates are large, and if the commercial produce is valuable, it may pay them to offer to the Boards to bear half the cost of constructing the roads, and if the Boards refuse to make the roads, to make them to the length of 3 or 4 miles entirely at their own expense. Then, as to obtaining water for intensive cultivation during the dry months, they, in co-operation with other landlords, may develop some external source of supply, by constructing a large common tank or putting a bund across some river and pumping water therefrom. Again, it is of the highest importance that surplus water should be properly drained away, and if the drainage to the nearest khal must pass through the land of some neighbour, it will be necessary to make arrangements with him for this purpose.

Proceeding to the internal development of estates the landlords should pay close attention to what are called permanent improvements. They should study the problem of making intensive cultivation profitable during the dry months by making water available from tanks excavated on the estates for this purpose. When the tanks are constructed, the method

¹ Cf. Jevons, *The Economics of Tenancy Law and Estate Management*, p. 84.

of drawing water from them will require attention. If they are large, it may be profitable to pump the water by means of oil engines, which will enable the watering of a much larger area. Next, they should attend to the problem of the consolidation of the fragmented holdings of their tenants. The scheme suggested before for the purpose cannot be worked out without the consent of the landlords, who, in addition, can do a great deal to promote it, as they have great influence and power over the tenants. If the re-distribution of fields is carefully planned out in all cases, after inspecting and valuing them according to their situation, character of the soil, etc., the tenants will be generally willing to go in for the re-distribution, as they stand to gain considerably by having their holdings compact. But, if any tenants refuse to recognize the advantages of such a consolidation and reject any scheme for the purpose, the landlords, in the present state of the tenancy law, have no power to compel them to accept a re-distribution of fields. It has been suggested before that this power should be given to them ; but, if it is not, they should endeavour to induce such tenants to consent to the re-distribution, by offering them a slightly larger area, or some other advantage such as a reduction of rent. In granting such concessions, the landlords must make sure that the total effect upon their income is an increase and not a reduction in it, as this ought to be the result of the consolidation of holdings on their estates. Again, if they have any free land, *i.e.*, land not in the possession of occupancy tenants, they should provide holdings of suitable sizes on it, and rent them to cultivators, whom they know to be enterprising and willing to learn improved methods of cultivation.

If the landlords have any waste land or land yielding a very poor rent, they should carefully examine the possibilities of profitably reclaiming or improving it, and of making it bear crops or some useful produce. Rapidly growing trees may be planted on such land for purposes of fuel. Even if no

waste land is available, it is desirable that landlords should put some land under such trees, and should allow the tenants to take away fuel therefrom for their own use, at a small charge, but on condition that they refrain from using cow-dung as fuel and utilise it as manure. The landlords may also put some land under trees which yield good timber for agricultural implements and building purposes.

They can also do a great deal to improve the methods and standard of cultivation of their tenants. The latter are thoroughly averse to trying experiments, and this is natural, because their failure would spell disaster. They adopt new methods, only when they are convinced of their practical utility, after actually observing their success in a neighbour's fields. Mere advice or even an offer of assistance by the landlords to their tenants for the introduction of new methods or the improvement of the standard of cultivation will therefore be futile, because the latter will merely listen respectfully to the former, but will do nothing. The landlords should select one or two intelligent and enterprising cultivators from each village in their estates, should secure their confidence, and should induce them to try the improved methods which they suggest, offering them a reward if they are successful, and promising to make up their loss if the experiments fail. When the other villagers observe the success of these men, they will soon follow suit without any special inducement, and will learn the improved methods from their successful fellows.¹ The landlords may also have a farm on their estates, on which they may try new seeds, manure, implements and other improvements, before recommending them to their tenants. The tenants, in addition to being convinced of the practical utility of suggested improvements, need to be convinced that the improvements are within the resources which they can afford. For this purpose, nothing

¹ Cf. Jevons, the Economics of Tenancy Law and Estate Management, p. 87.

can be better than trials on farms in the presence of the cultivators. Such farms should also serve as centres for the distribution of improved seed, implement, etc., and for giving information, advice and guidance to the tenants. The landlords should also help in the solution of the problem of cattle improvement, which has been examined before, by co-operating with the Agricultural Department in the work of educating the cultivators to realise the great importance of improving the breed of their cattle and to use the bulls supplied by Government and other cattle farms for covering their cows, by taking a lead in the formation of co-operative cattle-breeding societies, by inducing their tenants to grow fodder crops as spring crops and to construct silos, and by other ways. Finally, they should study the possibilities of providing their tenants with hand machines for doing much of the laborious work that has to be done by hand, and of lending such machines to them on the hire-purchase system if they cannot buy them.

It is thus seen that the landlords can play a very important part in increasing the agricultural wealth of the delta even with their present powers, but it is desirable that their powers against their tenants should be increased in some directions in the interests of the improvement of the agriculture of the delta, with due safeguards to prevent the misuse of such powers. The increase in powers that will be necessary for facilitating the consolidation of fragmented holdings in their estates has been already dealt with. Again, as explained before, if any occupancy tenants, in spite of the repeated warnings of the landlords, continue to exhaust the soil by habitual carelessness in cultivation, or to damage the crops of their neighbours by neglecting to clear their land of weeds, or by draining it into that of their neighbours, or by allowing their cattle to stray, the courts must be empowered by legislation to warn such tenants, on the application of their landlord, that they are liable to be evicted unless they stop such

practices, and if these warnings go unheeded to order their eviction, after careful enquiries, on the condition that the landlords pay them the compensation that may be determined by the courts for the loss of their rights and for any permanent improvements that they may have carried out on the holdings concerned. The occasions for the exercise of these powers by the courts will be rare, because the mere knowledge that the courts are armed with these powers will serve in almost all cases to check the above-mentioned practices, and therefore there is no danger that such legislation may cause hardships to tenants.

Further, as mentioned before, if a landlord, in the interests of the development of his estate, wishes to make permanent improvements on the holdings of his occupancy tenants and to charge them extra rent at the rate of 8 or 10 per cent. of the capital cost of the improvements, he cannot do so, in case the tenants, through ignorance of the extent of the advantage that would be obtained from them, refuse to pay the extra rent. Here again, the courts should be given the power of compelling the tenants to accept one of three alternatives, *viz.*, to have their occupancy rights bought out by the landlords, or to accept other land of equivalent value in exchange, or to pay the extra rent on the completion of the permanent improvements, after the courts have thoroughly satisfied themselves that the tenants would secure a net gain from the projected improvements after paying extra rent at the rate of 8 or 10 per cent. of their capital cost. Finally, it has been explained that if a landlord desires to undertake his own cultivation according to improved methods, he is prevented from doing so if the land suited to this purpose is in the possession of occupancy tenants who refuse to accept other land of equivalent value in exchange, or if all his land has already been let to tenants who have secured occupancy rights. In these cases, the courts should compel the tenants concerned either to accept other land in exchange, if this is

possible, or to have their occupancy rights bought out by the landlord. But, before pronouncing such a judgment, the courts must make quite sure that the purpose for which the landlord wishes to resume the land is capable of fulfilment under the conditions existing at the time. Whenever the courts decide that occupancy rights should be bought in by a landlord, the fair purchase price in each case would seem to be between twenty and twenty-five times the difference between the rent payable by the occupancy tenant and the full rent which the same land would yield if let to a yearly tenant.¹ All these powers, however, should be used by the courts very sparingly, and only when they feel convinced that their exercise would lead to a substantial increase in the agricultural wealth produced by the estates in question.

For the success of the policy of promoting the standard of agriculture indicated above, it is essential that a body of trained estate agents and subordinates, who are efficient and honest, and who regard their profession as an honourable one, should be available to the landlords. They must be paid an adequate remuneration, and in order that they may be worth it, they must receive a proper training. Therefore, along with the course for the degree of Bachelor of Agriculture, the establishment of which has been suggested above for the sons of the landlords, a course of study extending over two years and leading to a Diploma of Estate Management should be established. A school for imparting agricultural education of the secondary grade and turning out demonstrators and teachers for village agricultural schools has been lately established at Dacca, and provision should be made there for teaching such a course. Those who are admitted to this course should have passed at least the Matriculation examination, and the course should include, firstly, a general knowledge of improved methods of agriculture from a practical point of view,

¹ Cf. Jevons, the Economics of Tenancy Law and Estate Management, p. 68.

secondly, a knowledge of proper keeping of accounts, thirdly, a knowledge of business methods relating to the proper filing of all papers, the conduct of correspondence and prompt and systematic dealings with the tenants, and fourthly, a knowledge of the elements of civil and mechanical engineering for the purpose of designing and supervising the construction of ordinary farm buildings, tanks, etc., and of supervising the work of the trained mistri (mechanic), who may be kept on an estate for repairing modern agricultural implements. All the larger estates should be placed under the charge of men, who have obtained this diploma, but not unless they have obtained two or three years' actual experience of estate management as assistants to older diplomaed agents. A shorter course extending over one year only and leading to a certificate should also be established, a lower qualification than the Matriculation should be admissible for this course, and those who receive this training should be made agents' subordinates and managers of small estates. An additional advantage of employing such men would be a reduction in litigation, because, having received some education, they would endeavour to prevent disputes, and to settle those which arise, by means of compromise or private arbitration.

It is to be hoped that the landlords will in the future become enlightened enough to realise the necessity of improving their relations with their tenants not only by fostering the development of their agricultural resources in the ways indicated above, but also by ceasing to exact from them abwabs, which have not been sanctioned by law, and the existence of which has been explained to be a great economic evil at present in a large part of the delta. The fulfilment of this hope, however, will be a slow process, and in the meanwhile, some remedy must be found to check this evil. As education spreads among the tenants, they will be more and more able to realise the rights granted to them by law and custom, and to protect them. They should form themselves

into unions for securing the enforcement of law, checking the illegal practices of the landlords and safeguarding their own rights in all cases. A few such unions called Kisan sabhas (peasant societies) have recently come into existence in the United Provinces and Bihar. But, although this power of self-protection will grow among the tenants, this growth also will be slow and cannot be thoroughly effective for a considerable time. It is therefore most desirable that Government should directly intervene in those estates, in which the illegal practices of the landlords and their agents exist on such a scale as to become oppressive, and should suppress them by exercising special control over these estates. The burden thrown upon Government would be too great, if it were to endeavour directly to suppress all illegal practices, and, in addition, such a task would be impossible to attain, and therefore Government should not attempt to exercise any control unless the practices become really oppressive. If the practices are resorted to by the agents and the subordinates without the consent or knowledge of the landlords, and if the landlords themselves are enlightened and well-disposed persons, all that Government need do is to insist that the agents and subordinates must be replaced by men, who have received a proper training for their work according to the scheme suggested above, and who are certified by those under whom they have received their training, as suitable, on grounds of character, for such positions. But, when the landlords approve of these practices or themselves resort to them, the management of their estates should be taken over by Government and should be conducted by a department, which should be established for the purpose under the control of the Director of Agriculture. The management should be taken over temporarily, and should be handed back, when it is placed on a proper footing, and when the landlords give a sufficient guarantee for its continuance on the lines laid down by Government. The expenses of the managing

department should be charged to the estates that are being managed, and the rest of the income should be paid to the landlords. The question as to whether the management of a particular estate should be taken over by the department must be decided by the courts and not by Government.¹

The provisions of the Act of 1885 relating to the grant of rent-receipts are very frequently disregarded, because both the landlords and tenants fear that their interests will be prejudiced by the entries made on the prescribed form of receipts, and the absence of rent-receipts promotes the above-mentioned illegal practices. It is most important that the tenants should receive a receipt for any money paid on account of rent as soon as it is paid, and to remove the above difficulty, the form of rent-receipts should be simplified by the omission of all entries, which are not essential for this purpose. A Bill, which has been framed for amending the Act of 1885, proposes to do this. Government may make available, at low prices, books of these standard printed rent-receipt forms at all post offices. Further, after the end of each year, the tenants should be entitled to receive from their landlords statements of account containing full details of unpaid arrears of rent and cess, if any, and to remove reluctance to the issue or acceptance of such statements, it should be provided that the entries of area in such statements would not be binding on the landlords or tenants in any suits or proceedings for the alteration of the rent of the tenancies. The bill referred to above provides for this also.

This bill also proposes to remove some of the defects of the Act of 1885, which have not been removed by later Acts.² Firstly, it seeks to remove the defect, mentioned before, that according to the Act, the occupancy tenant right can be

¹ Cf Jevons, the Economics of Tenancy Law, p. 80.

² See the Report of the Committee appointed by the Bengal Legislative Council to consider the amendment of the Bengal Tenancy Act and its draft bill, Calcutta Gazette, 10th January, 1923, pp. 1-164.

enjoyed only by one person in the chain of sub-infeudation, and that the right frequently gets into the hands of a person other than the cultivating tenant, by providing that all persons holding land under the person, who enjoys the legal status of raiyat, should be given the right of occupancy as against their immediate landlord with all the privileges appertaining to the right. Exceptions would be made only in cases of temporary sub-letting by persons who are really unable temporarily to cultivate the land themselves, and in such cases the temporary sub-tenants would be prevented from obtaining occupancy rights to the disadvantage of their lessors, if the latter are able, within a reasonable period, to resume cultivation themselves. Secondly, the bill recognizes that the practice of transferring occupancy rights, although unrecognized by the present tenancy law, has become widespread,¹ and seeks to regulate the practice in the interests of both the landlords and cultivating tenants. It is against the interests of the latter, that occupancy holdings should be purchased from them by money-lenders and non-agriculturists and then settled on a rack rent with them, who would thenceforward become mere tenants-at-will. This evil, however, would be largely obviated by the above-mentioned provision of the bill for giving a limited occupancy right to all under-raiyats, and the bill makes no further provision for this purpose. Then the landlords are clearly entitled to object to undesirable persons being forced on them as tenants by the transfer of occupancy rights, and the best way of enabling them to get rid of such persons would be to give them a right of pre-emption or rather of subsequent purchase from the transferees, to be exercised within a reasonable time after the transfers are brought to their notice. Therefore, the bill provides that each transfer by private sale shall be made by a registered instrument, that the registering officer shall

¹ The number of transfers effected by registered deeds rose from 43,000 in 1884 to over 250,000 in 1913, and must be still greater at the present time.

immediately cause a notice of the transfer to be served upon the landlord, that the transferee shall within two months tender payment to the landlord of the transfer fee, which shall be 25 per cent. of the consideration money, and that the landlord may, if he wishes, within two months of the receipt of the notice of the transfer, have the holding transferred to himself on payment to the transferee of the consideration money with 10 per cent. as compensation, together with any sum which the transferee may have paid in respect of rent or landlord's fee. Similar provisions, with the necessary modifications, are framed in the bill to meet the cases of transfer by will or bequest, or by sale in execution of a decree. The proposed transfer fee of 25 per cent. of the consideration money would be too high, because although some landlords in the delta are able to extort this or even a higher fee, the majority of them do not appear to obtain more than 15 or 20 per cent. of the purchase price.¹

Thirdly, the bill seeks to reduce the economic evil resulting from the barga system or the system of produce-rent, which has been explained before, by modifying in the following three respects section 40 of the Act of 1885, which provides for the commutation of produce-rent into money-rent, but which has been found to be unworkable ; firstly, if the landlord is dependent upon the produce-rent for the subsistence of himself and his household, it shall not be commuted into money-rent ; secondly, some compensation should be paid to the landlord as a premium for commutation, on account of the disparity, which exists in many parts, between the average value of the rent in kind obtained by the landlord and the money-rent into which it can be equitably converted ; and thirdly, a bonafide cultivator, defined as a person who himself supplies the ploughs, cattle and implements of agriculture, and who pays a share of the produce to the original owner of the land, shall

¹ Cf. Mr. Thompson's note of dissent, *Calcutta Gazette*, 10th January, 1923, p. 125.

be deemed to be a tenant and not a labourer in spite of any future contracts to the contrary. It is idle to expect that these modifications of section 40 of the Act of 1885 will immediately lead to the conversion of any considerable portion of the barga area into cash-paying tenancies. Such a conversion is clearly against the interests of the landlords and the barga tenants are at present too much under their power to insist upon and to secure this conversion. But, with the gradual increase in the intelligence, and power of combined action and resistance, of tenants, that will result from the spread of education, this conversion will be gradually brought about, and the above modifications of section 40 are calculated to facilitate it. In the meanwhile the further extension of the evil of the barga system resulting from the endeavours of money-lenders and non-agriculturists for obtaining cash-paying tenancies by purchase or foreclosure on mortgage, and sub-letting them on produce-rent, will be prevented by the first provision of the bill, which extends a limited occupancy right to all under-raiyats of whatever grade, combined with a further provision for extending the modified section 40 to such under-raiyat also.

The bill contains other provisions also for safeguarding the interests of the tenants, such as those, which vest occupancy raiyats with certain rights of cutting down and utilising trees and of excavating tanks on their holdings, and which facilitate payment of rent by money-order and proof of its tender, and applications for the appointment of common managers for estates or tenures where, owing to the existence of a large number of small co-sharers in them, the tenants are put to inconvenience and harassment in the payment of their rent.

As regards sub-infeudation, which has been seen to be another great defect in the economic organisation of the delta, the committee, which has framed the above bill, was of opinion that it would be impracticable to enforce any measure forbidding sub-infeudation and sub-division of tenures, without

a wholesale disturbance of existing rights. It is true that it would be impossible to reduce the number of the tenures, which are already in existence, without resorting to legislation. If merger were made compulsory, a large number would automatically disappear. Such a measure would be conducive to public interest, because great opportunities for fraud are afforded, if the same person happens to be both landlord and tenant of the same property. The only other way to reduce the number of existing tenures would be expropriation. Thus, facilities may be given to the tenants of an absentee middleman to buy him out or to the holders of assignments to transform them into sales, the courts fixing the prices. Expropriation has been resorted to in Western countries, but is unknown in India. Moreover, all legislation for reducing the number of existing tenures is sure to be severely opposed, and has no chance of being carried out. But the creation of new tenures, although it may not be expressly prohibited, ought certainly to be discouraged. Those of the new creations, which promote raiyats, merely mean changes in status and do not increase the number, but other new tenures are mostly interpolations or aliquot creations. In most of these, outright sales would equally secure the objects of the parties concerned. A high stamp duty on leases, which are granted by aliquot landlords or to aliquot tenants, or which interpolate fresh tenures on lands already leased, and a low stamp duty on sales, would do much to induce the alienators to resort to the simpler and cheaper method. Further, to reduce the confusion caused by the aliquot system it would not be difficult to establish a cheap and easy method of partition for proprietors, tenure-holders and raiyats, and when it is established, it may be found practicable to legislate that all undivided properties must be managed by common managers. Unless measures are taken along these lines in the near future, this evil is bound to grow apace.¹

¹ *Cf.* the Survey and Settlement Report for Bakarganj, p. 60.

In connection with sub-infeudation, another defect in the economic organisation of the delta, *viz.*, the destitution of the petty landlords, has been mentioned before. It is very difficult to find a practical remedy for this defect. It must be sought in a change in the mentality of the petty landlord class, an appreciation of the dignity of labour and the development of a new spirit of enterprise on its part. This change can be gradually brought about by social reform, which will induce this class to look for its salvation to those commercial and industrial pursuits in which the wealth of all great nations is substantially bound up.

The remedy for another economic evil, *viz.*, the indebtedness of a large section of the people, lies in enabling them to obtain their capital at a reasonable rate of interest and training them to repay this interest and to redeem the excessive capital, that they may have borrowed, within reasonable periods. The germ of this remedy is found in the creation of co-operative credit societies. It has been explained before that it is essential to speed up the present rate of the progress of the co-operative movement. It is true that the number of co-operative societies that have to be liquidated is considerable every year, and that such liquidation produces more harm than the total absence of any organisation of a society in a locality, as even the good members suffer considerable loss on account of the principle of unlimited liability. But, it may be pointed out that most of the societies, which are liquidated, have to undergo this process solely on account of the fault and dishonesty of one or two bad members, and because the procedure for the recovery of debts, instead of being simple, is tedious and expensive. Therefore, if the Co-operative Societies Act and the Public Demands Recovery Act are so amended as to empower the Registrar to expel a bad member from a society on the report of the Central Bank or the Departmental Officer concerned, and to realise the dues of such a member by the certificate procedure, most

of such societies can be re-constituted, and need not be liquidated.

For speeding up the movement, a comprehensive scheme must be framed and worked out, for establishing a pioneering society in every group of villages throughout the delta, so that the benefits of co-operation may be seen and appreciated by most of the people of the delta, leading to the ultimate establishment of a society in each village or part of every large village. For this purpose a large staff of men, who possess the confidence of villagers, and who can exercise influence upon them, will be necessary. The existing machinery for the organization of societies is very defective, because it consists of a few honorary organisers, who have to be paid annually travelling allowances amounting in the aggregate to a large sum by Government, but who have no stake in the movement, and whose responsibility ceases with the expiry of their term of appointment. The number of paid officers of the Co-operative Department, the inspectors and auditors, is too small for the work that must be done, and their jurisdictions are too large to enable them to acquire that close personal touch with the villagers, which alone can inspire their confidence. The Département must have a sufficient number of trained men, who have a stake in the movement, who can be held responsible if anything goes wrong, and who can secure the requisite confidence and influence. Young, intelligent and energetic graduates of Universities having their homes in villages should be trained for the work of organisation, and each of them should be placed in charge of a group of villages, small enough to enable him to obtain personal knowledge of the economic conditions of most of the families residing within his jurisdiction, which will secure to him the necessary confidence on the part of the villagers. His superior education, training and position will give him the necessary influence with them. The practicability of this proposal will be seen from the fact that the officers engaged

in survey and settlement operations in the various districts of the delta secured the confidence of the cultivators and obtained considerable influence with them for the same reasons as those mentioned above.¹ The scheme will involve the appointment of from 100 to 200 officers in each district according to its size, and will therefore be costly, but as the direct and indirect benefits resulting from the success of the co-operative movement will be very valuable, the expenses ought to be incurred. Moreover, when the movement obtains a firm hold in the delta as a result of the successful working out of the above scheme, the work of organisation and control will be substantially reduced ; the number of officers in the Department can then be reduced, and this will bring down the expenses also. For the first few years, however, the officers will have to do arduous work. Each of them will have to devote constant attention and care to the pioneering society established in the group of villages in his charge, and after it has begun to work smoothly and efficiently, he will have to draw the attention of all the villagers under his charge to the advantages offered by it in the course of friendly talks with them, to arouse their interest in its working and to encourage them to start new societies, which also must receive his fostering care until they begin to work smoothly. He will also have to counteract the tendency of the villagers to regard a society only as the means of obtaining loans more easily than from the money-lender and on cheaper terms—a tendency which, as Mr. Jack has pointed out, has been accentuated by the lack of influential advice. Such an officer, possessing the confidence of the villagers and influence with them, will, with the exercise of the necessary firmness, be able to counteract this tendency far more effectively than has been hitherto found practicable. He may also succeed, in many cases, in reducing the burden of the debt of the villagers by

¹ Cf. Jack, *Economic Life of a Bengal District*, p. 105.

arranging compositions with the money-lenders. It has been explained before that a very large part of the debt, in most cases, consists of unpaid interest on the original loan at an exorbitant rate, and by moral persuasion he may succeed in inducing some of the money-lenders to soften the terms of their unjust agreements. The officers engaged in survey and settlement operations were incidentally able to arrange such compositions in the course of their duties, which had nothing to do with the problem of indebtedness,¹ and officers engaged mainly to help in the solution of this problem, ought to be even more successful in this work.

For financing permanent improvements on land, however, the co-operative movement cannot suffice. It requires to be supplemented by the establishment of a land mortgage bank, which will advance loans on the mortgage of land to landlords or tenants for carrying out permanent improvements beneficial to agriculture at a rate of interest of from 8 to 10 per cent., being 2 or 3 per cent. higher than the rate which it will have to pay on fixed deposits. In Continental countries such banks have been in existence for many years and have proved successful. Such a bank in the delta will help to pay off the existing mortgages at high rates of interest, and will advance additional sums for carrying out the desirable improvements. It should engage an agricultural engineer as an adviser, who will examine and advise on the plans for all projected improvements before money is advanced for carrying them out, so that the banks' money will not be wasted on unremunerative improvements. The bank should also supervise through this engineer, the actual carrying out of the improvements, for which money has been advanced, so as to prevent the money being utilised by the borrower for some other purpose.

Apart from finance, the speeding up of the co-operative

¹ Cf. Jack, *Economic Life of a Bengal District*, p. 109.

movement will also help in the solution of the problem of rural leadership. The educated members of the landlord class, as mentioned before, will be the best rural leaders, but until they can be induced to take up this role, the leaders must be found from among the cultivators themselves; and as Sir Horace Plunkett has pointed out,¹ the co-operative movement has brought to the front in Western countries a new type of rural leader, who is not a good speaker, but whose knowledge and experience enable him to do much to promote the welfare of the village community of which he is a member. In the delta the field for this work is very large, but men of this type will take time to discover themselves and to be discovered by their fellows. There may already be found some villagers who can take the lead in the simpler matters of organization, but they do not possess the technical knowledge and the power to inspire others, which are necessary for further progress, and therefore until such men are forthcoming, this progress will have to depend mainly on the exertions of the trained officials. This dependence, however, must be regarded only as a stage of progress, and the interaction of Science, Education, and Co-operation may be expected to produce leaders possessing the necessary qualifications.²

Further, for an improvement in the well-being of the delta, it is essential to deal with the defects in its administrative organisation. This organisation is much the same in the delta as in the other parts of India. At Calcutta, the provincial head-quarters, there exists for the purpose of supervising the revenue administration, a Board of Revenue, which is the chief revenue authority of the province as well as an appellate court for the increasing volume of revenue and rent suits. But for other purposes than revenue the provincial government deals chiefly with its commissioners and

¹ Rural Life Problems of the United States, p. 123.

² Cf. Calvert, Wealth and Welfare of the Punjab, p. 39.

collectors. A commissioner is in charge of a Division consisting of four or more districts and exercises a general control over the conduct of affairs within his division. He is responsible for ensuring that the local officers duly discharge their duties and that the orders of Government are properly carried out. The real unit of administration is the district under a district officer, known as the magistrate and collector, but it is partitioned into sub-divisions under assistant or deputy collectors and these again into police circles called thanas, which, although primarily units of police administration in charge of sub-inspectors, have been recognised as the smallest units of territorial partition and are used in all administrative matters. The district officer is the mainstay of the administration. He is the executive chief and administrator of his district and all other magisterial, police and revenue officers employed therein are subordinate to him. As district magistrate he is the head of the department of criminal justice, exercises general supervision over the inferior courts, directs the police work and thus maintains peace and order in his district. As collector he is responsible for the realisation of land and other revenues and taxes, for the management of government estates, the assessment of the income-tax, the settlement of, and supervision over, excise and opium shops, etc. He is assisted in this criminal and revenue administration by a subordinate staff through whom he conveys the orders of Government to the people. He also exercises general supervision and control over the work of the district board and the municipalities existing within his jurisdiction. Several other specialised services exist with staffs of their own such as the establishments for roads and buildings, agriculture, industries and co-operative credit. Although these are controlled by their departmental heads, the district officer influences their policies in various ways, lends them his support and mediates between them and the people whenever necessary.

In two respects, however, this organisation in the delta is defective as compared with that in the other parts of India the land revenue of which is temporarily settled. In the first place, in the latter, as the land revenue has to be collected directly from thousands of cultivators, a larger, more closely knit and more elaborately organised subordinate staff has to be maintained through whom the district officer is in close touch at all times with every inch of his territory, and at the same time this organisation is more thoroughly understood by the people.¹ This enables the district officer to understand better the needs and difficulties of the people and to discharge more easily and efficiently his duties in connection with the improvement of their material condition. But, in the delta, on account of the permanent settlement, land revenue is collected from a far smaller number of people, and therefore the administrative organisation is less closely knit, and the district officer has less means of maintaining close touch with the needs of the people and of helping them to meet their difficulties. However, as long as the permanent settlement persists in the delta, it is not easy to see how this defect can be removed except by developing the local self-governing bodies, improving their financial resources and enlarging their spheres of work.

The second defect requiring remedy is the absence of a competent subordinate land records staff. In the other parts of India, in which the land revenue is temporarily settled, the periodical revision of the land revenue has made accurate information regarding landowners, tenants and rentals quite essential from the first. Therefore, steps were early taken by Government to provide for a field-to-field survey of land and for the preparation of a record of rights. At each revision of land revenue settlement, re-survey and revaluation of land and revision of record of rights have been made

¹ Cf. Montague-Chelmsford Report, para. 123.

wherever they have been found necessary, but the necessity of these costly and harassing operations has been obviated as far as possible by providing for the up-to-date maintenance of all village maps, records and returns by recording all changes that may occur from time to time through the agency of Provincial Departments of Land Records in the shape of village accountants whose work is supervised and co-ordinated by inspectors who in turn are controlled by the superior staff with the Directors at their head. The attention of these departments has long been specially directed to the official organisation, personal improvement, training and instruction of the local subordinate staff. Consequently these parts of India possess elaborately organised and thoroughly efficient Departments of Land Records with competent subordinate staffs to the great benefit of the agricultural classes and Government. For, they have afforded complete security to all classes of rights and interests in the land, have helped other departments in making available to Government a more perfect knowledge of the conditions, prospects and needs of the agricultural classes, suggested improvements and taken a hand in promoting them.

The Bengal delta, however, owing to the permanent settlement of land revenue, has lacked a competent subordinate land records staff and the above-mentioned advantages obtainable therefrom. Until recent years no provision was made for the field-to-field survey of estates or for a record of rights, as the land revenue was permanently settled. Only a register of estates and of changes in their ownership by sale, gift or inheritance was provided for, as they concerned the persons to whom the Collector was to look for the payment of the revenue, and the register did not show any subordinate rights. Under the Act of 1876 the registration of changes in the ownership of 'estates' has been made compulsory, subject to a penalty for neglect; but the registration of 'tenures' and other interests is optional, although

it is encouraged by certain disabilities which exist if they are not registered.¹ When the strained relations between landlords and tenants became increasingly prominent, it was felt that the trouble was largely due to the absence of an authoritative field-to-field survey and its accompanying record of rights in the land and of rentals to which the parties to a dispute could appeal. Therefore, the Tenancy Act of 1885 gave the Bengal Government the necessary powers for getting a field-to-field cadastral survey made and a record of rights prepared in any specified area. But for several years these powers were not used because it was felt that the maps and records would soon become out of date and useless unless all changes which occurred from time to time were noted therein by a permanent village or circle agency, which, however, did not exist in the Bengal districts, and the expense and difficulty of creating which were thought to be immense. At last, after prolonged discussions, it was decided to carry out survey and settlement operations. They have now been completed in all the districts of the delta, except Pabna and Bogra, and these districts at present possess accurate field maps and registers of holdings and rentals; the operations in Pabna and Bogra will be completed in a short time. However, the up-to-date maintenance of the maps and records has not yet been provided for. An Act was passed in 1895 for the voluntary registration of changes in the land records, but so far little advantage has been taken of it. The absence of a competent subordinate land records staff in the Bengal delta means that the delta is denied advantages which are enjoyed by the other parts of India. It means that the possessors of various rights and interests in land have much less security, that Government cannot be supplied with that intimate knowledge of the conditions, prospects and needs of the agricultural classes and with those suggestions for agricultural

¹ Cf. Baden-Powell, p. 165.

Cf. Calvert, *Wealth and Welfare of the Panjab*, p. 39.

improvements which are made available to it in other parts of India, and that it has less means available for promoting such improvements in the delta. It is true that the creation of an efficient subordinate land records staff will be costly and difficult, but the task ought to be undertaken, because the results will be most important. It has been found, as mentioned before, that when the record of rights has been prepared and copies of the khatian containing all the details of all holdings have been distributed, the rights of the raiyats are better understood by them and respected by the landlords, and the provisions of the tenancy law are better observed. These benefits will dwindle away as the record of rights gets progressively out of date owing to the absence of entries of changes in holdings; on the other hand, if the record is kept up to date, the benefits will increase progressively, along with the increase in the education, intelligence and power of the raiyats. Moreover, a large expenditure has already been incurred in preparing the record, and it will be largely thrown away if the record is not kept up-to-date.

Finally, for an improvement of the standard of living in the delta it is essential to organise the local self-governing bodies on a sound footing and to supply them with adequate financial resources. The organisation of the District Boards has on the whole been found to be fairly satisfactory, they have sufficiently large powers and have shown abundant vitality, the most capable men have generally come forward to serve on them, as membership has carried with it considerable prestige and influence, and have taken considerable interest in their work, and provided that their financial position improves, they are capable of carrying out, with the existing organisation, those objects of public utility of which the delta is in great need. But the Chaukidari Panchayets established by the Village Chaukidari Act of 1870 and the Union Committees established by the Local Self-Government Act of 1885 for groups of villages have failed to secure an

effective system of rural self-government.¹ The activities of the former have been restricted to the maintenance of the village police, and the latter have been mere subordinate bodies exercising very restricted powers and dependent mainly on the district boards for funds. The Village Self-Government Act of 1919 has therefore provided for the organisation of Union Boards, for groups of villages, vested with the powers and duties necessary for the management of communal village affairs such as the control of village police, dispensaries, water supply, primary schools, roads, bridges, waterways, cattle-pounds, ferries, etc., and entrusted with powers of self-taxation necessary for these purposes. A number of such village union boards have taken the place of the chaukidari panchayats and the union committees in the delta, but the pace of their extension has been slow. It requires to be accelerated, so that in the course of 4 or 5 years a network of union boards throughout the delta will come into existence, and the village panchayats and union committees will disappear entirely. There are indications that the useful work done by several Union Boards has begun to be appreciated. The difficulties in the way of making them successful in the comparatively backward parts of the delta can be substantially removed by frequent visits for the first few years to such villages on the part of the Circle Officers, who will train the villagers in the art of managing their own affairs, by explaining to them the duties, functions and powers of the Union Boards and the responsibilities of the villagers in these matters, and by sympathetically guiding the working of the Boards.

Besides the bodies mentioned above, there exist at present local boards for sub-divisions of districts, whose functions consist of the supervision of the village bodies and the exercise of the powers delegated to them by the district boards. But,

¹ Cf. the Report of the Bengal District Administration Committee, 1913-14, para. 109

in the system of local self-government as established in the delta, there is really no room for both the district and local boards to exist together, as they make the administrative chain too long. Moreover, the district boards have on the whole done substantial work, and they are bound to remain, as bodies administering areas smaller than a district cannot have sufficient resources to enable them to employ the necessary staff of superior officers, such as District Engineers, District Health Officers, etc.¹ On the other hand, the local boards have failed as executive bodies, because the district boards have preferred to keep in their own hands the management of all important works and institutions and have delegated to the local boards only petty duties, which have failed to arouse the interest of their members.² They have failed equally as supervising authorities, because they have been composed largely of members who have had neither knowledge of, nor interest in, the work of the village bodies. Moreover, a merely supervisory function can hardly be regarded as a sufficient justification for their existence. It seems desirable, therefore, that the local boards should be abolished and that, as each district has been divided into circles, the supervision of the village bodies in a circle should be entrusted to a committee of the District Board composed of the members elected from the circle in question, subject to the final control of the entire District Board, the Circle Officer being the chief executive officer of the committee. The power of electing members of the district boards, which is at present exercised by the local boards, should be transferred to the union boards.

To improve the financial resources of these local self-governing bodies, it is necessary to increase their powers of

¹ Cf. *Self-Government in Rural Bengal*, by a District Officer, 1920, R. Cambray & Co., Calcutta, p. 42.

² Cf. the Report of the Bengal District Administration Committee, 1913-14, paras. 101 and 105.

taxation, and to induce them to exercise the powers more fully. Hitherto these bodies have generally shown a reluctance to utilise fully even the small powers given to them in this respect. Taxation is liked nowhere, and an increase in it is sure to be opposed in the delta. But, if the level of taxation is increased very gradually, and if the yield thereof is wisely spent in promoting the objects of public utility which are urgently required, the opposition cannot be strong enough to make the increase in taxation impolitic, and will soon be disarmed. With the growth of primary education among the mass of the people and their general level of intelligence, they will appreciate more and more the importance of improving their standard of living, they will realise from the experience of other countries that this object can be furthered mainly by the local administrative bodies, and they will become more and more willing to pay for securing the conveniences and comforts of life, which these bodies can supply, if their financial resources are improved. Moreover, a large part of the increase of taxation will have to be borne, not by the cultivators, but by the landlords and tenureholders, who are best able to bear this increase and who will benefit most, directly and indirectly, from the furtherance of the projects of public utility. It is true that members of this class occupy an important position in the local bodies, and that in several cases they can prevent the utilisation of the greater powers of taxation that may be granted to these bodies, but the need for greater resources is generally recognised to be so urgent, and the landlord class is seen to escape so lightly from the burden of local taxation that its members recognise that it will be suicidal openly to oppose a slow increase in taxation, as such action will not only alienate completely the sympathies of the other classes, but will also exacerbate their feelings. They have begun to realise the necessity of avoiding any open actions which will strengthen the general feeling that prevails against them. It is

possible that they will try to shift the increase in the burden to their tenants by increasing the exactions from them, but this will become increasingly difficult, as the tenants gradually understand the rights granted to them by the Tenancy Acts, as they learn to stand by them, and as the Acts become actually more and more operative.

The main source of income of the district boards consists of the Road and Public Works cess levied at the maximum rate permitted by law of one anna per rupee of the gross rental of land. The cess should be increased gradually by one pice at a time, and a further increase should not be made, until the public has obtained some tangible benefit in return for the previous increase. Other possible sources of income such as a tax on carts, carriages and ponies, should also be investigated. At present, all district boards make substantial contributions to the union boards. But, ultimately it is desirable that the union boards should become financially self-reliant for carrying on those objects of public utility, which will benefit only those residing within their jurisdiction, and that all the resources of the district boards should be available to them for carrying out those projects which will benefit the whole districts. Therefore, as the financial resources of the former increase, the grants made to them by the latter should diminish progressively.

Apart from the grants made by the district boards and the yield of certain small sources of revenue such as cattle pounds, public ferries, etc., the financial resources of the union boards consist of the yield of the union rate. The Village Self-Government Act of 1919 provides that each union board shall impose yearly on the *owners or occupiers of buildings* within the union a rate amounting, firstly, to the sum required for the salaries and equipment of the village police and the salaries of the establishment of the union board, and secondly, to the sum estimated to be required to meet the expenses of the board in carrying out any projects of public benefit stated

in the Act if such estimate has been approved by not less than $\frac{2}{3}$ of the total number of the members of the board at a meeting specially convened for the purpose, together with 10 per cent. above such sums to meet the expenses of collection and the losses due to non-realisation of the rate from defaulters; that this rate shall be assessed according to the income and property within the union, of the persons liable to the rate; that the amount assessed upon any person in any one year shall not be more than 84 rupees; and that any person, who, in the opinion of the union board, is too poor to pay even $\frac{1}{2}$ anna per month shall be altogether exempted from the payment of any rate.¹

These provisions suffer from the defect that anyone possessing even a large property within a union can escape the rate altogether, if only he avoids occupying or owning a building in it. While an ordinary cultivator just above the margin of subsistence has to pay the rate, the rich landlords, who may annually realise within the union large sums in the shape of rent, can escape the taxation altogether by the simple expedient of refraining from having any kutcherry or office within the limits of the union, and of making their agents seek the hospitality of some villagers at the time of collecting the rent. Therefore, both in the interests of justice and of the financial resources of the union boards the Act requires to be amended on the principle that all those, who have any pecuniary interest within the jurisdiction of a union, and who would profit directly or indirectly from the expenditure incurred by the union board in promoting objects of public utility, should be made to contribute their quota to that expenditure, by paying the union rate, even if they do not own or occupy any buildings within the union, and that therefore even such bodies as railway companies, the postal authorities and the police department should be assessed for any

¹ Sections 87 and 88.

real property that they may hold within a union. If the Act is amended along these lines, the union boards will have substantial resources provided that the financial powers are gradually utilised more and more fully. However, hitherto the boards have on the whole shown a reluctance to levy a rate, which will bring in more than the amount, which must be obtained for the compulsory maintenance of the village police. Some union boards do obtain an additional sum in this way, but the amount is a measure not of the needs of the villagers in respect of the improvement of their standard of living, but of the confidence which they have in the union boards.¹ It is therefore most important that some tangible improvements, however small, should be carried out by union boards soon after they are formed, so that they may secure the confidence of the villagers in their honesty of purpose, devotion to public interests and ability to serve the villagers well. If the villagers are made to realise that the work of village improvement cannot be undertaken without imposing taxation for the purpose, and if they have the confidence that the funds provided in this way will be spent carefully and efficiently, they will consent to a gradual increase of the union rate within the limits permitted by law.

A properly co-ordinated and carefully conceived system of free, primary and rural education, which may gradually be made compulsory throughout the delta, is the most important of the objects of public utility, to which close attention must be directed, because illiteracy and ignorance have been seen to be the greatest obstacles in the way of the economic progress of the delta in its several aspects. For the purpose, the primary schools must be so distributed throughout the populated areas as to make it possible for every child to walk daily to school. The Primary Education Act of 1919 contemplates children of from 6 to 10 years of age walking up to

¹ Cf. Village Self-Government in Bengal, by a District Officer, p. 43.

one mile. Some do this now, but half a mile seems to be about as much as can reasonably be expected of the majority of children between these ages in the climatic conditions of the delta. Therefore, primary school areas comprised in circles of half a mile radius with a primary school in the centre should become the standard, but proper allowance should be made for the existence of impassable barriers. In this organisation, the extreme case would be that of the child of six years walking half a mile to school, but most of the children would be more than 6 years old and would be living at a distance of less than half a mile from the nearest school. Whenever it is found that small patches of population cannot be included within any of such school areas, small schools, consisting of two infant classes only, should be established, the children walking rather more than half a mile to the full primary school, after passing through the infant classes. Provision for agricultural education to be imparted in continuation of the primary education should be made in one-fourth of the number of these schools in such a way that boys would have to walk not more than a mile and a half as a rule and 2 miles in extreme cases, in order to receive it. The boys, being between the ages of 12 and 14, would be old enough to walk this distance to school without difficulty.

Such a scheme does not require any considerable increase in the present number of schools. It means a proper distribution of the existing schools, which have come into existence haphazardly without any system at all, and it means a large increase in the average size of a school. The average size of a school at present is 20 children, but under the above scheme the size of a school would vary from 100 to 300 children. This concentration, however, far from being a disadvantage, would prove most advantageous, as it would secure economy in sites and buildings, the number of teachers, administration, and inspection, as it would increase the efficiency of teaching by enabling the

full and proper use of the capacities of the teachers, as it would facilitate the meeting of special requirements such as the teaching of the Quoran, the Hindu classics and the Bible or of special subjects, and as it would facilitate the ultimate introduction of compulsory education.¹

The definite aim of the first four primary classes should be to make a child literate in its vernacular and to enable it to use the first four rules of arithmetic. Then, a boy's primary education should be rounded off for a year; the character of his work in this class should be semi-vocational, and the curriculum should consist of vernacular reading of printed matter and of manuscripts and documents relating to his future work (such as leases, agreements, petitions and agricultural and co-operative circulars), vernacular composition and letter-writing, tables, mental calculations, simple mensuration, bazar and zemindari accounts, and either agricultural nature study or manual work according as the boy wishes to become a cultivator or an artisan afterwards. After this stage, he should enter upon a definitely vocational course intended to give him knowledge and skill in his future work.

The requirements of industrial education have already been dealt with, and so it remains to consider agricultural education only. It should be such as to awaken the boy to an appreciation of man's power over nature and to a realisation that progress largely consists in increasing power to harness natural forces to serve human ends, to implant in him a firm hope in progress towards a better state of things attainable by human efforts, to concentrate his attention on the practical opportunities available for the purpose and on the need of seizing and developing them in co-operation with his fellows, and to send him back to the land a more enlightened and valuable cultivator. The course should extend over two years, and the training should be of a thoroughly practical

¹ Mr. E. E. Biss has examined these advantages in detail in his Report on Primary Education in Bengal, 1921, pp. 27-8.

character. The course should deal with all the important aspects of agriculture, including cattle management and hygiene, elements of mensuration and surveying and elementary carpentry and smithery, all with special reference to the everyday needs of the cultivator. But, in order to keep up the knowledge acquired by the boy in the primary classes, some instruction in reading and writing should also be given, and an agricultural reader written in the vernacular by an officer of the Agricultural Department should be used for the purpose. In addition, conversational lessons should be given with the help of lantern slides and charts on the elements of personal hygiene and rural sanitation, co-operative credit and agricultural improvements. All the subjects should be dealt with in such a manner as to be of real help to the boy in his work as a cultivator afterwards. He should be made to conduct agricultural operations on plots of land belonging to the school, and also to help in the annual repairs of the school building. The headmaster should also be the agricultural demonstrator for the locality, and the place should really be a centre for demonstrating to the neighbouring cultivators the value of agricultural improvements.¹

Now, as to the cost of providing this free primary and agricultural education. The average number of primary schools necessary for a union area will be 4 and these will be supplemented by an average of $1\frac{1}{2}$ infant schools. Careful calculations seem to show that for providing these, the capital expenditure on buildings and equipment, simple but efficient, will come to about Rs. 1,500, and the annual recurring expenditure on staff, who will obtain a minimum pay of Rs. 12 rising to a maximum of Rs. 24, together with free board and lodging given by the villagers, and on contingencies

¹ The Government of Bengal in the Ministry of Agriculture in a Resolution dated 17th February 1922 has declared its intention of making extensive provision for agricultural education of the elementary grade but owing to the lack of funds, no action has hitherto been taken upon it.

and repairs will be about Rs. 2,600.¹ The capital expenditure should be met from loans, which should be raised by the district boards, and which should be gradually paid off. The interest charges at the rate of 6% and sinking fund charges at the rate of 4% per annum will together amount to Rs. 150 annually for each union area, whose total recurring expenditure will thus amount to about Rs. 2,750. In spite of a substantial increase in the financial resources of the local bodies secured in the ways mentioned above, it will not be possible for them to bear the whole of this expenditure in the near future as they will have to provide several other important public utilities. The Provincial Government should therefore bear half of this expenditure for some years, the other half being met by the local authorities. As there will be at least 1,000 rate-payers in a union area, this will mean a burden of slightly less than 2 annas per month at a flat rate upon each rate-payer.

Free agricultural education will be provided in one of the four schools contained on the average in a union area, and the total annual recurring charges for this purpose, including the interest and sinking fund charges on the capital cost, may be taken at Rs. 2,000. Half of this expenditure also should be borne by the Provincial Government, so that the cost to the local bodies of providing this agricultural education will come to a little more than one anna per month per rate-payer at a flat rate. It is thus seen that according to the above scheme, efficient yet free primary and agricultural education can be provided in rural areas at a cost of a little more than three annas a month per rate-payer at a flat rate. This rate, however, is mentioned not as a desirable method of levy, but simply as the most convenient way of giving a clear idea of the burden, which will be imposed not at a flat rate but according to income and property. Consequently, the ordinary cultivators

¹ Mr. Biss also arrives at similar figures in his Report on Primary Education, pp. 62-3.

will have to pay much less than three annas, and even the poorer of them cannot regard this as a hardship, especially as all of them will be able to educate their children without further cost. The children of the cultivators, who are too poor to pay any rates, will obtain this great benefit without any payment. The cost of providing primary and industrial education in municipal areas according to the above principles also works out at about three annas per month per rate-payer at a flat rate, but it is unnecessary to go into details here as the number of towns in the delta is small, and as the real problem of education lies in the rural areas.

As regards medical relief, definite programmes should be framed in all the districts for the gradual increase in the number of dispensaries. Hitherto the policy of the district boards has been to construct expensive buildings for dispensaries, and this has handicapped their extension. Buildings of the cheap type, on which private dwellings in the rural areas are constructed, can be almost equally efficient for this purpose, and if henceforward dispensaries are housed in such buildings, the means for affording relief to the teeming population of the delta can be rapidly increased. Again, there is a great shortage of doctors qualified in the Western medical science, because they tend to concentrate in Calcutta and the towns, the rural areas offering them a very precarious living until they are able to gain the confidence of the surrounding people and to establish a fair practice. It will therefore be a good plan for the district boards to induce medical practitioners to settle in selected centres of rural areas by offering them subsidies and gradually withdrawing them as they become able to set up private practice. Such doctors should also be made to visit schools within a radius of five miles of their centres in order to give simple courses of instruction on personal hygiene and sanitation. This will greatly help the gradual evolution of a 'public health conscience' in the delta. Medical relief by means of the Western science should

be supplemented by the relief that can be afforded by the indigenous medical science, as the latter can be provided much more cheaply and is known to be suited especially to the treatment of chronic diseases.

As regards sanitation and public health, every district board should have a skeleton organisation, with the District Health Officer at its head. He should organise preventive measures against the outbreak of cholera and small-pox. Pamphlets containing instructions for their prevention should be distributed through the agency of the Presidents of Union Boards, vaccination should be made free and should be accompanied by a vigorous vaccination campaign. If such an organisation exists in normal times, whenever epidemics occur, they can be dealt with effectively, by forming without loss of time round this nucleus, with the help of the provincial Department of Public Health, a temporary organisation of itinerant doctors and sanitary inspectors, who will move through the infected areas, sterilizing tanks with bleaching powder, disinfecting affected houses and giving their occupants and neighbours the necessary instructions. Without a permanent organisation as a nucleus, measures of this kind cannot be improvised without loss of valuable time, when epidemics occur, and the diseases cannot be checked at the very beginning.

The problem of water supply is also very important, because during the summer months there is usually a serious shortage of water even for drinking in many parts of the delta. Hitherto the district boards have pursued the policy of meeting the expenditure for this purpose entirely from revenue, but the magnitude of the problem is so great that a substantial programme of excavating tanks can be financed only by means of loans. The Government of Bengal should, therefore, be approached for this purpose. However, even if the revenue of the district boards increases considerably, and even if they adopt a loan policy, they will find it impracticable

to make an adequate water-supply available to the vast population under their jurisdiction. They are too large units of administration to undertake directly the provision of an adequate water-supply to all villages. Much of the work in this respect must be performed by the Union Boards, in whose power mainly lies the solution of this difficult problem. The District Boards, however, should encourage, guide and subsidize them in this work.

The difficulties of communication during the dry months owing to the lack of roads have already been explained, and as the growth of the wealth of a tract depends vitally upon the communication with its own different parts and with the outside world, this problem also requires to be tackled with energy and boldness. In this case also it will not do to depend entirely upon the revenues, and a vigorous loan policy must be resorted to. Here also, much will depend upon the activities of the Union Boards.

The expenditure of the district boards on veterinary work has shown no improvement in recent years. This is unfortunate, because apart from education, medical relief, the improvement of water-supply and roads, and measures for arresting epidemics quickly, there is probably no direction in which expenditure of local funds in agricultural areas is more required than in the direction of the provision of good veterinary treatment. The outlay on this work, therefore, should be increased as soon as possible, and every district board should employ a number of veterinary assistants, who should work under the supervision of district veterinary inspectors belonging to the provincial Veterinary Department, and who should visit villages affected by cattle diseases, treat the affected cattle and inoculate others to prevent the spread of the diseases.

CONCLUSION

The examination and analysis of the economic life of the Bengal delta attempted in the preceding pages are now complete, and it remains only to gather up the threads and to sum up the results. As seen before, the soil of a large part of the delta is exceptionally fertile as it is annually enriched by deposits of silt carried down by big rivers, and it is naturally irrigated by flood water and thus depends upon the vagaries of the rainfall far less than that of other parts of India. But these great advantages are far from fully utilised on account of the operation of several factors such as the backwardness of the methods of cultivation, the lack of co-operation between the landlords and tenants, the exactions and apathy of the former, the illiteracy, conservatism and laziness of the latter, too much subdivision and fragmentation of agricultural holdings and the indebtedness of the cultivators. The artisans of the delta possess considerable skill and a home market, yet most of the industries are in a decadent condition on account of the lack of proper organization and the dominance of the Mahajan. Further, not only is the delta very densely populated, but the density has been also increasing somewhat rapidly. Consequently, the standard of living of the people of the delta, although it is appreciably higher than that of the people of other parts of India, is substantially lower than that of the people of the Western countries, which do not possess the natural advantages mentioned before. This shows the great importance of the human factor in the science of economics and leads to the conclusion that (communities and nations would remain poor or fall into decay or poverty in the midst of rich surroundings in spite of the fertility of their soil and the abundance)

of their natural resources, if the human factor is poor in quality or is allowed to deteriorate or to run to waste.¹ Countries dependent on agriculture must remain poor until their people learn to extract from the soil with the help of science, education and co-operation all the wealth that it would yield to those who know how to deal with it properly. Nature is far less favourable to the Western countries than to the Bengal delta, yet the former are much more prosperous, because their people possess education, scientific training, the spirit of co-operation, the capacity for hard and sustained work, a readiness to strain this capacity to the utmost, a sense of the value of discipline and a realisation of the need for self-control and sacrifice for the common benefit and for the subordination of the present to the future yet greater advantages. The wealth of a community, thus, depends not upon its natural resources, which are merely the material converted into wealth by the work of human beings, but upon the energy, initiative and moral fibre of its members; without these qualities no community can really become prosperous: with them no community need regard any difficulties as insuperable.²)

However, the preceding pages make it clear that an economic revolution is taking place in the Bengal delta also, and that its economic conditions are gradually tending to approximate more and more to those in the West. This is shown by the commercialization of agriculture that is taking place in the delta and the features of which have been explained before. The cultivators of the delta are gradually passing from the self-sufficing to the commercial stage. The world's demand for agricultural produce has begun to affect their choice of crops, their economy is being influenced more and more by world prices and problems of marketing, and the acquisition or loss of foreign markets and fluctuations

¹ Cf. Carvour, *Principles of Rural Economics*, p. 174.

² Cf. *Rural Reconstruction in Ireland*, p. 16.

of market prices are matters of increasing importance to them. They are realising more and more that it is more advantageous to grow the more paying commercial crops and to purchase a part of their food with the proceeds than to grow the whole of their food requirements themselves. In other words, they have begun to appreciate the importance of the fact that their well-being may be better promoted by their living upon the profits obtained from their holdings rather than by living upon the produce yielded by them. Thus the cultivators are now growing proportionately more for the markets of the world and proportionately less for their own needs than they did before. Their crops are now largely saleable crops and can therefore form the basis of credit; they are easily convertible into cash and can therefore be used as security.¹ The significance of this change has not been understood by some writers, who have deplored it on the ground that it has prevented that increase in the food supply of the delta which would otherwise have taken place, and has thereby raised the prices of foodstuffs. They seem to have forgotten that the cultivators, like other workers, have every right to direct their productive activities into those channels which will yield the highest return to their labour and capital, and that it can be no part of their duty to grow food for the urban consumers, if they can secure larger profits by growing other crops, just as the urban consumers have a right to purchase their requirements from other quarters, if they can obtain the requirements more cheaply from them than from the cultivators of the delta.

The fluctuations of prices and wages, the improvement of the general standard of living and the beginnings, small though they are as yet, of the desire on the part of the progressive members of the community for an improvement in the qualities of the human factor mentioned above, offer further valuable evidence to show that the economic conditions in the delta

¹ For a similar change in the Punjab see Calvert, pp. 11-12.

are tending to approximate to those in the West. The late Mr. Ranade, India's pioneer economist, pointed out three decades ago that prices and wages in India were mostly governed by custom and not by competition, and were therefore stable, and this was one of the main reasons which led him to conclude that the economic conditions in India were radically different from those in the Western countries. Some of the later economists have adopted this conclusion without regard to the fact that prices and wages are now influenced more by competition than by custom and are therefore no longer stable. It is true that the movements of prices and wages are not the same in the Bengal delta and other parts of India, and that they are not the same even in the different districts of the delta. But, as explained before, the movements are now largely governed by the interaction of demand and supply and are therefore closely related to each other. Again, it has been explained before that in the wake of the gradual commercialization of agriculture the general standard of living has appreciably improved, that certain conveniences and comforts of life, which have been long enjoyed by the people of the Western countries, but which were practically unknown to most of the people in the delta until recently, are now generally enjoyed, and that, although there is yet a considerable difference between the standards of living in the delta and the Western countries, the difference is now less than it was three or even two decades ago. Still again, although there is no appreciation on the part of the vast majority of the people of the delta, of the necessity of making the most of the available resources, a small but increasing number of progressive members of the community are realising the necessity of calling in the aid of science, education and co-operation and of improving the quality and moral fibre of the people for increasing the wealth and promoting the welfare of the delta, just as the Western countries have done, and the beginnings that have been made in these directions and the

encouraging results that have been already achieved have been explained in the preceding pages.

It thus becomes clear that the rural organization of the Bengal delta is tending to approximate more and more to those in the Western countries. It has been mentioned before that other writers have shown that the same tendency is noticeable in the other important tracts of India, and that the present writer has shown in another work that the same is true of India's foreign commerce, organised industry, finance and banking and public finance. (The conclusion then is inevitable that India's economic life, in all its aspects and in all the more important tracts, is gradually approaching more and more that in the Western countries, and this conclusion is of the highest importance, because it shows that with the progress of this transformation, the principles propounded by the Western economists would be more and more applicable to India, and that therefore endeavours to develop a separate Indian Political Economy would produce misleading results.)

It may be emphasised that this conclusion does not suggest that all the reasonings developed by the Western economists are fully applicable to India at the present time. These pages can make no such claim, because, as explained before, the science of economics is a body of reasonings which hold good and profess to hold good only when certain premises are granted, and because, as seen before, the premises of some economic reasonings do not at present fully agree with the facts of India's economic life. But with the progress of the transformation mentioned above, the premises would agree more and more with the facts, and this means that the reasonings derived from the premises would more and more hold good in the case of India.

The above conclusion has great practical importance also. It has been explained before that the standard of production and the standard of living in the Bengal delta, as in the other parts of India, are much lower than those in the

Western countries, in spite of the fact that nature is much more favourable to the former than to the latter. It is obviously most unsatisfactory that the total production in the delta should be very considerably below what it would be if the output of most producers of wealth came up to the level of that of the most skilful. It is unsound that even agriculture, by far the most important industry in the delta, should be in such a condition that it is doing less well and producing less wealth than may reasonably be expected of it. If proper remedies are applied to the defects in the economic organization of the delta, its people have a better prospect of achieving greater prosperity than is open to their fellows in many other countries. As it is found that economic conditions in the delta are tending to approach those in the West and that the economic reasoning developed in the West is applicable to it, the best chances of removing or at least mitigating the defects are afforded, not by applying remedies conceived on independent lines, but by applying remedies following the lines of those which have been more or less successfully applied by England and the other Western countries to the problems which beset them. In economic activities England has stood foremost, and has already passed through stages through which the other countries are now passing or which they have yet to reach. But England had not always a high standard of production, and its people did not always enjoy a high standard of living. Its people have gradually worked their way up from poverty to wealth, from famine to comparative plenty. If any country, poor at the present time, genuinely wishes to achieve high standards of production and of living and is prepared earnestly to work for this goal, the economic history of England affords it many valuable lessons, which it can utilise in shaping its economic policy, especially as, of all the countries, England possesses the fullest record, in the shape of original documents, of all the measures which it undertook from time to time in

securing economic progress. However, in the search for remedies, it would be unwise to confine attention to England, because some of its conditions are exceptional. For instance, as explained before, traditions of friendliness and fair-minded dealings between the landlords and tenants in England, the keen interest of the former in the work of the latter, their active support to the latter in difficulties and new enterprises, and the careful, systematic and progressive cultivation of the latter do not exist in other countries. On the other hand, as seen before, countries of Continental Europe such as France, Germany, Belgium, Denmark and Holland exhibit many features similar to those of the Bengal delta, and therefore the history of the economic development of these countries can afford valuable guidance to the delta in shaping its policy. Hence, the remedies which have been suggested in the last three chapters of this book for the defects in the economic organization of the delta, follow the lines of those which have been found suitable in England and the other Western countries. The role of the economist is fulfilled by the suggestion of practical remedies, and it is for the politician and the administrator to put them into operation, and it may be hoped that their operation will ultimately raise the prevailing standards of production and living in the delta, which have been the mainsprings of the examination and analysis of the economic life of the delta carried out in these pages.

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GLOSSARY OF INDIAN WORDS

- Abwabs—Illegal exactions by landlords from tenants.
Aman paddy—Paddy harvested in winter.
Aratdars—Brokers.
Aus paddy—Paddy harvested in autumn.
Bhadralog—The respectable and educated class.
Beparis—Petty traders.
Baid—Depressions in table-land.
Barga—Produce-rent.
Bigha— $\frac{1}{8}$ of an acre.
Bil—Marsh.
Boro paddy—Paddy harvested in spring.
Chamar—Low-class Hindu.
Char—Alluvial island.
Chaukidar—Village policeman.
Hat—Village market.
Hookah—A kind of smoking-pipe.
Ijaradars—Contracting agents of landlords for the management of market places.
Jheel—Marsh.
Kachuri—Water-hyacinth weed.
Kala Azar—A type of fever prevalent mainly in Assam.
Kanango—Recorder of rights in land in villages.
Katcha—Temporary.
Khal—Canal.
Khatian—Document in which rights in land are recorded.
Khas mahals—Government estates.
Mahajan—Money lender.
Pacca—Permanent.
Pagree—Turban.

Paradanashin—Kept behind a curtain and not allowed to unveil in the presence of strangers.

Pargana—Part of a district.

Patwari—Village Accountant.

Raiyat or Ryot—Landholder.

Sanad—Legal document conferring some office or privilege.

Taktaposh—Low rude wooden platform.

Zamindar—Landlord or landowner.

Zamindari—Landed Estate.

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